

145
New
PRODUCTS
APPLICATIONS
PROCESSES

CHEMICAL EQUIPMENT PREVIEW

The Chemical Edition of
EQUIPMENT PREVIEW

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SEPTEMBER
(September-October)
1942

Latest Developments in Equipment
Materials and Products for Engineers
Chemists and Executives in
Chemical Process Manufacturing



Shallow stuffing boxes in gas pump head plates isolate bearings from pressure in pump

Rubberizing substitute easily calendered or processed by conventional methods

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CHEMICAL EQUIPMENT PREVIEW

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Then, to make sure you keep abreast of the latest developments . . . perhaps in something you have heard nothing about . . . you'll want to browse through the rest of the pages.

The Editors have searched far and wide to bring you this most comprehensive Preview of all kinds of product developments of help to you in your Chemical Process manufacturing work. Thus, they save your time . . . enable you to keep posted with the minimum of effort. And when you find an item that interests you particularly . . . and you'd like more information on it . . . here too the publishers will help you. Just turn to the handy information request slip . . . between pages 2 and 3. All you need to do is check the item that interests you, fill in your name and address and send this slip to the publishers. The information you desire will come to you promptly.

And don't forget . . . when you have finished with this issue, pass it on to your associates. They'll be interested too.

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You can receive it free of charge . . . simply by sending your request to the publishers and telling them of your connection in your

chemical process plant . . . if you are a chemist, engineer or executive.

Between pages 78 and 79 of this issue you will find a convenient request form which you can use. Fill in your name and company connection and send this to the publishers. Your request subscription will start with the next issue. There is no charge or obligation for this service.



Goodall "Snap-In" Loose Liners (U. S. Pat. No. 2025932) make use of a vacuum principle to hold the liner against the curves and shoulders of any size or shape chemical tank or container. Patented lip snaps over top edge and forms leakproof seal with rubber covered lid where necessary. Vital Transportation facilities are being conserved thru use of "Snap-In" Loose Liners which can be made to one mold in our factory and shipped to you to be snapped into any number of identical tanks or containers, without moving or seriously delaying the installation.

Same tank can be used for different solutions by inter-changing liners specially compounded for each solution. Repairs to damaged liners are easy and quick.

"SNAP-IN" LINERS OF SYNTHETIC RUBBER

Ever since synthetic rubber was commercially introduced, Goodall has been a foremost producer of products using synthetics. Today, we are "batching" four of the basic synthetic rubbers for everyday production runs in our factory. Why not send us a set of service specifications, now, while this ad is before you, and let us tell you how we can apply a synthetic or plastic compound to your rubber liner replacement problem. Be sure to state the highest priority you can furnish, because our synthetics are, of course, allocated only to uses most essential to the war effort.

Send for Liner Data Sheet

Drop a line to our main office for data sheet which, when you have filled-in and returned it, will enable us to submit recommendations and quotation covering GOODALL "Snap-In" Rubber or Synthetic Liners for your specific requirements. No obligation.



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CHEMICAL EQUIPMENT PREVIEW

Edited for Production and Laboratory Men in the Chemical Process Industries

TO VICTORY

TO VICTORY . . . through maximum production of the vital chemical process Weapons of War.

. . . to this the Editors and Publishers of CHEMICAL EQUIPMENT PREVIEW pledge their total support.

To you in the Chemical Process Plants and Laboratories of America, we pledge our entire energies to bring you the news — facts of developments in equipment, new applications, new processes . . . that your vital materials of War may be speeded, in ever increasing quantities, to our men on battle fronts.

To you men . . . and to all men in Government service concerned with production of chemical process products . . . CHEMICAL EQUIPMENT PREVIEW will be sent regularly, at your request . . . without charge of any kind. For your convenience, a request form is provided between pages 78 and 79 of this issue.

TO VICTORY . . . this is our pledge.

"That's Interesting"

Aluminum sufficient to build ten Army bombers was reclaimed from machine shop scraps by the Westinghouse Electric & Manufacturing Co. in a single month. After pure aluminum and copper are removed, the remaining metal is melted into 100 lb. ingots which are tested chemically and sorted into 50 kinds of alloys for re-use.

Many of the new factories to be built will be of the windowless type as this design offers obvious advantages in air-conditioning, heating and lighting. In this connection it is stated that the amount of daylight reaching the center of the average factory 80 to 100 feet wide is barely two candle power.

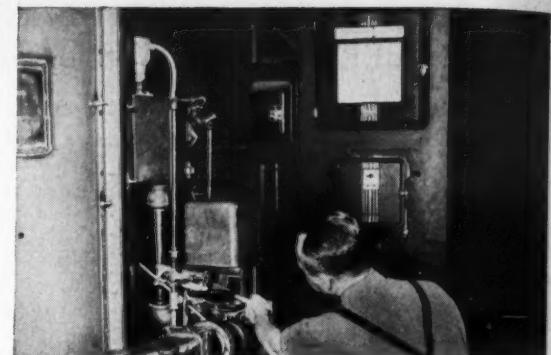
Some years ago when the exhaust tip on the end of light bulbs was eliminated, false tips were for some time placed on the ends of the lamps. This was not done to fool people, says the Hygrade Lighting News, but to satisfy them. Many people insisted on lamps with tips, having not been convinced of the superior merits of the new type lamps.

Substitutes . . . or Ideas

Too great emphasis cannot be laid on the importance of finding different ways of doing many jobs . . . where material shortages make accepted methods difficult, if not impossible. Many substitute materials are being utilized, with success. But perhaps even more effective are new ideas for handling work with equipment never before used for such jobs.

Look over the department, "New Solutions of Plant Problems," on the pages immediately following. You may find an idea that will answer a difficult situation . . . where accepted types of equipment are no longer available.

Such ideas are often more effective than any substitutes.



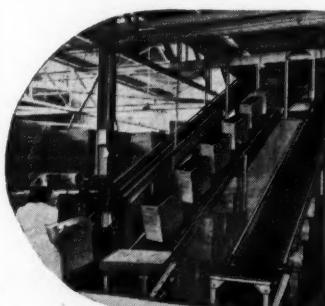
ASK THE FUEL VALVES

Whether Micromax Pyrometers Are Alert!

For a true picture of alert temperature control, look at the valve-drive of a Micromax Electric Control Pyrometer. Its pointer is almost always moving—perhaps slowly, perhaps quickly—but always throttling the fuel up and down—down and up again—matching every temperature change, big or little, with an exactly proportional change in the heat supply. Micromax doesn't dodge the job of alert control. It simply makes control look easy. If your plant has such a job, you'll be interested in the further facts about the Controller, in our Catalog N-00-A.

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Jrl Ad N-33-600(7)

When inquiring specify CEP5137 — see information request blank, pgs. 2-3



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25% TO 30%
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***AT PEPSODENT**—where floor area is valuable—this Scientifically Planned Conveyor System, designed by Alvey-Ferguson Engineers, handles over 100,000 units daily. With efficient Overhead Belt Conveyors carrying materials along the ceiling, only one aisle-way is required! Maximum floor space is thus provided for manufacturing processes, and other types of conveyors effect additional savings in transporting materials, supplies, and finished products. We shall be glad to send you full details of this and other installations in our new, illustrated catalog. Write for it, without obligation, today. The Alvey-Ferguson Co., 155 Disney St., Cincinnati, Ohio.

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When inquiring specify CEP5138 — see information request blank, pgs. 2-3

"That's Interesting"

Riboflavin, sometimes referred to as Vitamin B₂, has been adopted as the preferred name for this vitamin. Because of its yellow color it was called flavin from the latin word for yellow, *flavus*. Various prefixes were used to denote the origin of the vitamin such as lacto-flavin from milk, ovo-flavin from eggs and so on.

★

The adaptability of propionate salts as a mold inhibitor is illustrated in its successful use in delaying for at least three months mold growths in tobacco. Last year, it was used in 1,750,000,000 loaves of bread.

★

Chemical research now produces a hormone spray to prevent a pre-harvest drop of fruit. It is said that an apple tree so sprayed when fruit is beginning to ripen will hold apples so tenaciously that if left unpicked they will continue to cling until completely rotted.

★

Men are four times more prone to color blindness than women. Although the respective percentages thus afflicted are relatively small, four and one percent, the difficulty is considered a serious enough industrial problem to justify the use of various tests to uncover such cases.

★

Fine-pore cellulose sponges were some time ago adopted to serve as brow bands for surgeons, keeping perspiration from obscuring vision. They are now finding many practical applications in industry.

★

Blondes are preferred by gentlemen and a weather instrument manufacturer according to the Ohmite News. This manufacturer recently sought 2000 strands of genuine human blond hair, 9 to 18 inch lengths. The order bore an A-1-D priority.

★

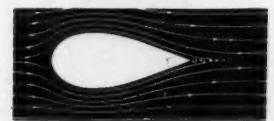
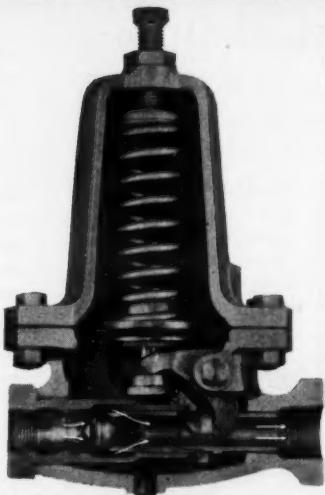
Drying qualities approaching of tung oil can now be imparted to domestic soybean, linseed, cottonseed, corn and fish oils by a newly devised process which resembles soap making. The fatty acids thus prepared can be combined with glycerol to form improved oils for making paints and varnishes.

★

Did you know that silver freezes at 960.5 degrees C. and that this is one of the basic fixed points on the International Temperature Scale; that it is known to function as a catalyst in a wide variety of reactions and that it is only slightly less electropositive than gold to such metals as copper, tin and lead?

For more information on product at right, specify CEP 5139 . . . see information request blank between pages 2-3.

ARE IMPORTANT PARTS OF YOUR PRODUCTION SET-UP *Now AND ANYTIME*



HERE'S THE "1000" FLOW PATTERN
The Streamlined form of the inner valve eliminates turbulence. It produces the flow pattern shown above which makes for maximum capacity when it is needed most and permits accurate pressure control under toughest working conditions.



You can find out full details on all of the Type 1000 benefits by reading Bulletin 1000 - send for it!

Have you forgotten yours too?

Probably you have forgotten that you had CASH STANDARD Streamlined Valves on your lines though it is a number of years since you purchased them. We can assume this because we have often received letters that read in part like this: "The '1000' valves are honeys. The fact that we don't ever have any trouble with the ones we have installed tends to make us forget them."

Good position to be in

When equipment performs so well that it is forgotten, the user is in a good position. Particularly is this true today when speedier production is demanded and the elimination of lost production hours due to "time out" for troubles is essential. So, if you have "1000" valves in your service now, here is one source that is making a valuable contribution to your speed and cost saving efforts.

Inexpensive Renewal Parts

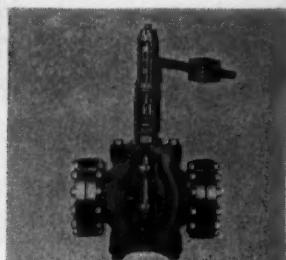
Experience in thousands of installations show that even after long use, only the valve seat and the seat ring show wear. You can make these simple replacements in your own plant — no delays in returning the valve to us. Rehabilitation of the entire valve is thus easily, quickly, and economically accomplished.

A CASH STANDARD
"GET ACQUAINTED"
COLUMN

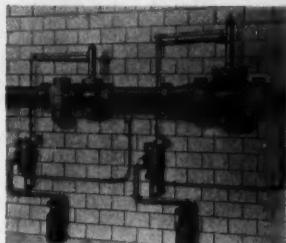


Question: "Don't you people make anything besides that Streamlined Valve you talk about so much?"

Answer: "Yes Sir; we do! And we propose to picture one or two of them here each time."



For precision jobs — the CASH STANDARD "42-R" Balanced Lever Valve. No lost motion; practically no maintenance. Heavy renewable seat rings; valve stem integral with liner valve. Roller guides kill side strains and stop packing trouble. Comes with parabolic liner valve; flat bevel seat; V-port seat; and V-port non-seating types. Made in sizes $\frac{1}{2}$ " to 12" inclusive. For use with pressures up to 600 lbs. Highest temperature 800 deg. F. in iron, bronze, and steel bodies; all standard trims. This valve is made also with center guide, and with Water Cooled, or Air Cooled Packing Box.



Where valve failure would be costly, here are two "42-R" valves operated by CASH STANDARD Type 100 Automatic Controllers, in two-stage pressure reduction. First stage: a 5" Valve reducing 150 to 50 lbs. gauge; second stage: an 8" Valve reducing 50 to 5 lbs. gauge. Load 70,000 lbs. steam per hour. Nearly four years' daily use; not a moment's trouble. (Single stage would have been entirely satisfactory, but customer insisted on double stage reduction.)

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**CASH STANDARD
CONTROLS . . . VALVES**

Announcing Plain Facts on Wartime Care of Rubber V-belts!

FREE! To every engineer, executive and maintenance man . . . to help him make his Rubber V-belts work better, last longer!

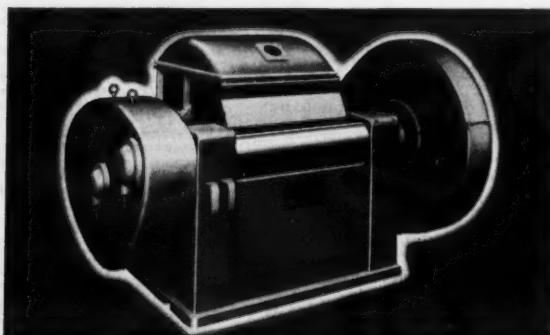
Every engineer concerned with vital wartime performance of V-belts wants to know . . . How the anatomy of a V-belt affects its maintenance . . . How to maintain proper V-belt tension . . . What to do about worn sheaves . . . What determines the "life expectancy" of V-belts.

This new Rubber V-belt handbook explains these and many other maintenance facts about V-belts. Find out how to protect yours, get the most from them! Send to Allis-Chalmers for this valuable new handbook today!



ALLIS-CHALMERS
MILWAUKEE-WISCONSIN

When inquiring specify CEP5140 — see information request blank, pgs. 2-3



For Fast and Thorough Mixing

If you are interested in a machine to do a high-speed, top-notch job of mixing, then the new B-P "Type T" mixer is just what you're looking for.

Its greatly simplified single stuffing box design maintains high vacuum for low temperature drying of plastic masses which, because of their plasticity, cannot be handled in a vacuum shelf dryer or in other types of low temperature dryers.

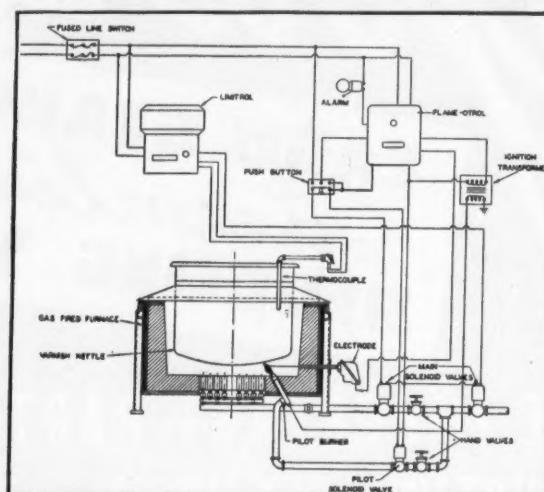
The B-P "Type T" makes possible intimate mixing during drying or evaporating.

Built in working capacities from 20 to 300 gallons. Write today for further facts.

BAKER PERKINS INC., Saginaw, Michigan

When inquiring specify CEP5141 — see information request blank, pgs. 2-3

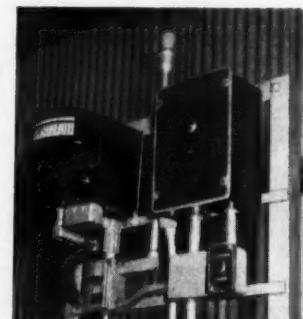
NEW SOLUTIONS OF PLANT PROBLEMS



FLAMETROL AND LIMITROL installed in cooking section control flame, regulate fuel supply, prevent flame failure and explosion

Gas-Fired Kettle Protected From Excess Temperature & Explosion

Control devices remove hazards, assure uniform production and cut costs



LIMITROL . . . shuts off fuel at safe temperature limit

Problem — Printing ink manufacturer, when adding a new cooking section in modernization program, wanted to provide protection against possibilities of explosion caused by flame failure under varnish kettles and also wanted protection against excessive temperatures which might ruin a batch by flashing.

Solution — Modernization program in-

cluded installation of four radiant-gas-fired kettle settings, three of which are enclosed and provided with combustion control devices. The fourth unit is an open setting kettle. The four burner settings use manufactured gas at 525 Btu per cu. ft., automatically mixed by low pressure proportioning-inspirator sets supplied with air at 1 1/4 lbs. pressure from blower. After zero governor reduces gas to atmospheric pressure, the air and gas mixture then flows to clusters of radiant refractory-cup burners.

For the enclosed settings, a "Flame-otrol" electrode and gas pilot combination was supplied. When pilot burner lights, main burner remains off until push button is released. In operation, starter button is kept depressed until Flame-otrol indicates that pilot is burning properly. Supply lines to Flame-otrol are carried through an air pressure switch, installed in blower line, so that no gas can be fed to the system unless the air pressure is sufficient to operate the burners.

Protection is given the batch by feeding supply line to

Flame-otrol through a "Limitrol", which shuts down the entire system in case excessive temperatures occur which might cause burning or flashing of material in kettle. The Limitrol thermocouple is an angle type installed in each kettle. If temperature of batch reaches the control point set on Limitrol, the instrument instantly closes the solenoid valve to the supply line. Operation cannot be resumed until temperature is reduced to safe limits.

Results — Fired by city gas, which is more easily controlled than the former method of coke firing, the new settings enable one man to body 15 barrels in less time than it previously took to body five barrels. Labor requirements per unit of production, over all operations, are from 33 to 50% less under new operations. In two settings grouped as a unit, it is possible to cut off all heat input instantly without moving fire or kettle; and by cutting off heat at exactly the correct point during bodying reaction, perfect batch viscosity can be obtained. Plant cleanliness is improved.

WHEELCO INSTRUMENTS CO., Dept. CEP, 841 Harrison St., Chicago, Ill.

When inquiring specify CEP5142 — see information request blank, pgs. 2-3

Compressed Air Ejects Punch Press Stamping from Die

Production doubled and rejects reduced by elimination of prying operations

Problem — As part of manufacturing process, pieces of aluminum as thick as 1/4 in. are stamped out in a punch press. Difficulty was encountered in ejecting the stamped pieces. Usual methods could not be used, the vacuum cups proved impractical.

Solution — The solution was found in the application of the inverse relation of air pressure to velocity. This principle is simply illustrated in a popular parlor performed with a spool, a cardboard disc and a pin. The disc with the pin placed through it to prevent side-slip is placed under the end of the spool. No amount of blowing through the other end can blow it away even though it would seem that gravity would cause it to drop. The air leaving the spool at high speeds strikes the disc and escapes between the spool and cardboard. The resulting balance of atmospheric pressure against gravity causes the disc to "float" in a plane very close to that of the spool. In applying this idea to the stamping ma-



COMPRESSED AIR . . . frees punch press stamping

APPLICATIONS

chine an 80 lb. air line was connected to the press. Air is blown through a $\frac{1}{4}$ in. orifice drilled in the upper die. Air pressure is controlled from the crankshaft simultaneously at the start of the upstroke of the stamping action. When the stamping operation is completed, the reduced atmospheric pressure above the metal piece causes it to rise with the upper die. The air pressure is then released and the stamped piece falls into the hands of the operator.

Results — Prying stamped piece loose from lower die and consequent scratches eliminated. Stamping production doubled and rejects cut down considerably.

WESTINGHOUSE ELECTRIC & MFG. CO., Dept. CEP, East Pittsburgh, Pa.

When inquiring specify CEP5143 — see information request blank, pgs. 2-3

Coating Welded to Pug Knives Lengthens Life of Blades

Method enables knives to maintain high efficiency; saves high alloy steel

Problem — Large plant employing pug mills was encountering heavy expense and loss of operating efficiency because of rapid knife wear. The relative loss of metal is visualized in the accompanying illustration. The knife at the left is a new pug knife made of high alloy steel and weighing 24 pounds. The next two knives, originally like the first, show the results of three months service in which over half the blade material has been worn away. This is typical of the wear that made it necessary to operate knives longer each day, slowed up production and increased wear on other parts.

Solution — New knives of this type are now protected by hard surfacing, welding $1\frac{1}{2}$ pounds of a special protective coating to each blade. Worn knives, too, were put in working condition and protected from further excessive wear. This was done by cutting off the stub blades, welding on new low carbon steel blades and hard surfacing with the protective coating, known as "Colmonoy No. 6."

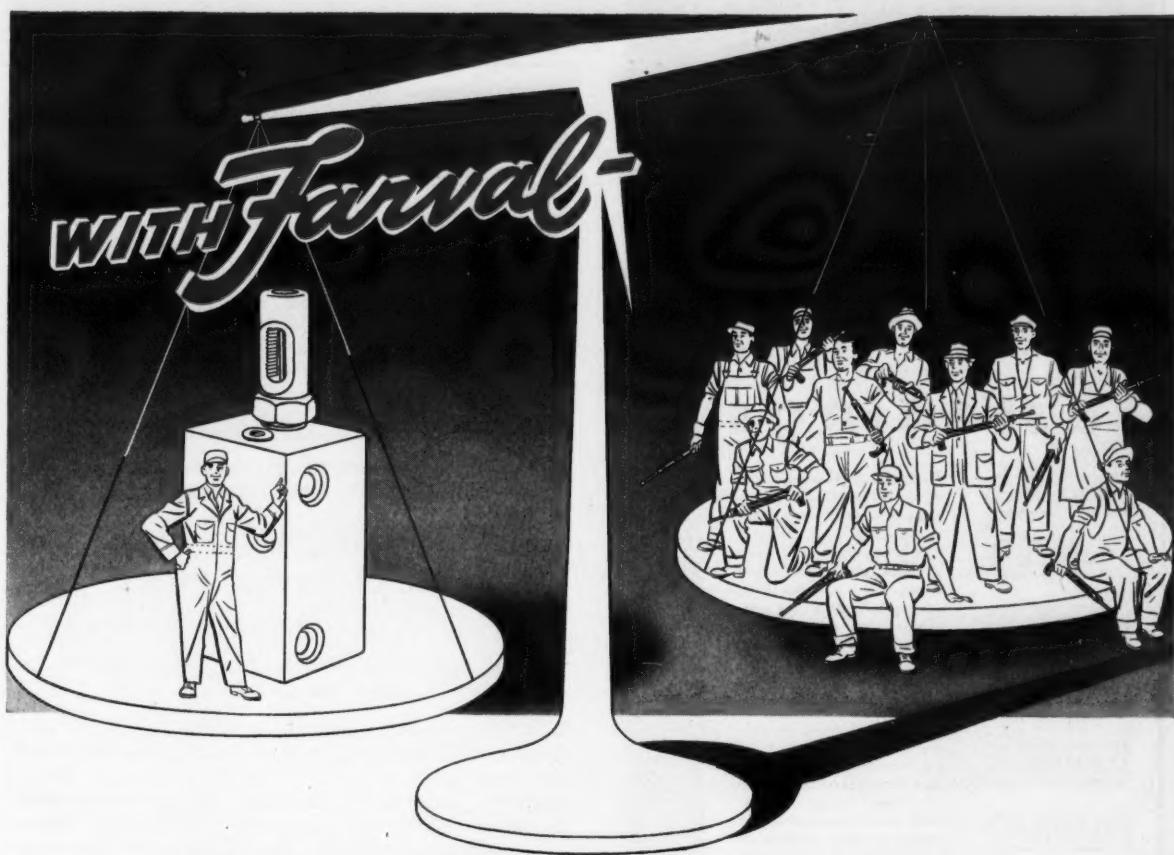
Results — The effectiveness of this process with new knives is indicated in the last two at the right of the illustration, showing their prime condition after nearly a year of constant service. In reconditioning the worn knives some 24 pounds of high alloy steel was replaced by approximately 5 pounds of low carbon steel and $1\frac{1}{2}$ pounds of hard surfacing material. Proper knife maintenance has contributed to increased production and lower operating costs.

WALL-COLMONOY CO., Dept. CEP, Buhl Bldg., Detroit, Mich.

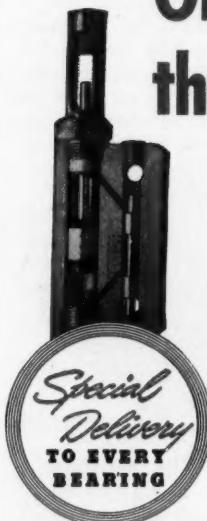
When inquiring specify CEP5144 — see information request blank, pgs. 2-3



KNIVES . . . show value of hard surfacing. (l. to r.) new knife, two, not hard surfaced and rapidly worn, two hard surfaced and still in condition after long use



ONE man lubricates more bearings than TEN men..and does it better!



Because with Farval, all bearings are lubricated in less than one minute from one safe central point.

Farval does a better job because each bearing receives the exact amount of lubricant it requires and the isolated or inaccessible bearing is not overlooked.

Farval increases production by eliminating all outage time for bearing

repairs which always result from hit-or-miss methods of hand lubrication.

With Farval you also save power — save lubricant — prevent accidents — and prolong the life of your equipment.

Give your oilers the tools and they will give you a better job. Install Farval!

The Farval Corporation, 3257 East 80th Street, Cleveland, Ohio.

*Affiliate of The Cleveland Worm & Gear Company, Automotive and Industrial Worm Gearing.
In Canada: PEACOCK BROTHERS LIMITED*



When inquiring specify CEP5145 . . . see information request blank, pgs. 2-3



Everlasting Fastenings

BRASS

BRONZE

COPPER

EVERDUR

MONEL

STAINLESS

Harper's Fastenings are fighting the Axis and fighting corrosion. They are being used on a multiplicity of war equipment . . . such as ships, planes, guns and tanks . . . because they successfully defy rust, corrosion and other tough conditions. Practically speaking, they are "Everlasting."

4320 STOCK ITEMS

. . . of bolts, nuts, screws, washers, rivets, and accessories in the non-ferrous and stainless alloys. Many are "hard-to-get." Specials manufactured to order. 4-color illustrated catalog free to executives.

The H. M. HARPER COMPANY, 2644 Fletcher St., Chicago; 45 W. Broadway, New York City.

HARPER Chicago
EVERLASTING FASTENINGS

When inquiring specify CEP5146 — see information request blank, pgs. 2-3

NEW SOLUTIONS OF PLANT PROBLEMS



HEAT DIFFUSING UNITS . . . increase efficiency of hide drying operations

Heat Diffusing Units Decrease Cost of Drying Hides

Simplified system releases 46,500 lbs. of metal obtained from old installation; power consumption reduced 56%

Problem — Leather manufacturer wished to increase efficiency and cut operating costs of heating equipment used for driers.

Solution — Method that had been employed moved hides through a 110 ft. tunnel, using as drying equipment fifteen 9 ft. turbulence fans from a shafting which ran the entire length of the dryer. This equipment was replaced by five heat diffusing units, requiring only 25 HP to circulate a large quantity of air. These units were spaced along the center of the drying tunnel. Air is drawn through louvres at the top of the tunnel by four of the units, heated and blown into a plenum chamber beneath the tunnel. The other unit is arranged as to draw air from below and discharge it through a duct into the top of the tunnel to facilitate drying of the leather as it is moved along during the process.

Results — Decreased power requirement of new heating units effects a saving of 35 HP. Old material removed from the dryer weighed 23 tons, that replacing it only 3 tons thus releasing a large quantity of vital metals. A small, but welcome, decrease in drying time was achieved and steam consumption reduced 5%.

CARRIER CORP., Dept. CEP, Syracuse, N. Y.

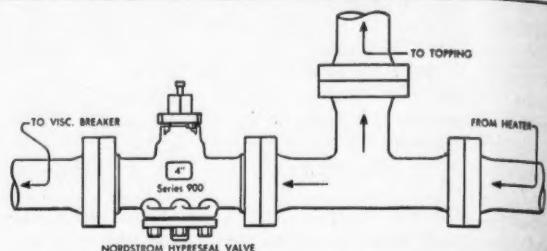
When inquiring specify CEP5147 — see information request blank, pgs. 2-3

Valve Saves Refinery 6 Hours of Stream-off Time at Each Switch

Located on transfer line from heater take-off; used to switch from visc breaking to topping without blowing down units or blinding line

Problem — Large refinery was anxious to eliminate loss of hours of valuable time when obliged to blow down units or blind line when switching from visc breaking to topping.

Solution — A valve capable of withstanding 850 degrees of heat and 500 lbs. pressure was located on the transfer line from a heater take-off permitting the desired switch without the previous difficulty. Line can be instantly



VALVE operates with line temperature of 850 F., 500 lbs. pressure in refinery switching operations shut off and the special coating within the valve permits easy turning without any tendency of galling.

Results — Valve installation saves over six hours of stream-off time at each switch and prevents slopping of any product. Formerly the unit had to be shut down by blinding the line every time a shut-off was necessary. Valve referred to here is 4" "Merchrome Coated — Series 900."

MERCO NORDSTROM VALVE CO., Dept. CEP, 400 Lexington Ave., Pittsburgh, Pa.

When inquiring specify CEP5148 — see information request blank, pgs. 2-3

Automatic Oiler Does Thorough Job on Elevator Door Checks

Eliminates oil waste and inconvenience of old methods; easily installed



AUTOMATIC OILER . . . supplies correct amount of oil

Problem — Lubrication of elevator door checks with the old oil cup method is often inconvenient, wasteful and untidy as it is difficult to avoid getting too much oil in the cups.

Solution — A new visible automatic oiler is now being used with good results by building superintendents. This automatic oiling unit can be installed easily. Transparent reservoir makes it easy to determine when refilling is required. Entirely automatic operation assures delivery of just the correct amount of oil at the proper interval. Eliminates fire hazard.

Results — Waste of oil eliminated. Saves time and labor. No damage due to leakage. Cleaning and re-decorating expenses greatly reduced.

TRICO FUSE CO., Dept. CEP, Milwaukee, Wis.

When inquiring specify CEP5149 — see information request blank, pgs. 2-3

Have You a "New Solution"?

If you have recently solved a problem in chemical process manufacturing, through a new application or new use of your regular products. The Editors invite you to submit the facts for publication in this department . . . in over 27,000 copies.

In submitting your "solution" please be sure to give the pertinent facts of (a) the problem, (b) just what was done and (c) what the results were. Send to

The Editors, CHEMICAL EQUIPMENT REVIEW
737 N. Michigan Ave., Chicago

NEW APPLICATIONS

Washer and Calrod Heater Speeds Washing of Metal Parts

Simple device affords big time savings in production of metal specialty



WASHER CLEANS METAL PARTS
... electric unit heats water

wire rack so that they will not strike the agitator or come in contact with the heater.

Results — The solution is brought to the proper temperature eight to ten times faster than by the old method, made for cooler working conditions and increased operating economy.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N.Y.

When inquiring specify CEP5150 — see information request blank, pgs. 2-3

Return System Saves 28% In Fuel

Vulcanizing presses at rubber company operate more economically; have fewer rejects in product



CONDENSATE RETURN SYSTEM
... brings 28% savings in fuel

compressor engine was completely wasted to atmosphere.

Solution — High pressure condensate return system was in-

stalled, which evacuates the molding presses at 85 pounds per square inch. The high pressure condensate is returned direct to the boiler at a temperature approximating 325 degrees, and the 5 pound compressor exhaust is completely utilized in heating makeup.

Results — Net results of the installation include fewer rejects with increased production and more accurate timing of the "cure" period, plus an estimated 28% fuel savings, the latter due in part to the better heat balance made possible by use of the previously wasted compressor exhaust.

COCHRANE CORPORATION, Dept. CEP, 17th & Alle-

When inquiring specify CEP5151 — see information request blank, pgs. 2-3

Belt Pulley Design Prevents Accumulation of Materials and Belt Damage

Features of a tail pulley employing cone and wing design are described in two-color-bulletin of four pages. Its application to bucket elevators and belt conveyors is shown in photo illustrations. Elimination of accumulation of material between the face of the pulley and belt surfaces and consequent grinding into the belt is explained. Reports of many installations are given, emphasizing improved operation and savings. Comprehensive chart contains all specifications for determining replacement requirements. Bulletin No. 3001 available on request.

SPROUT, WALDRON & CO., Dept. CEP, 100 Sherman St., Muncy, Pa.

When inquiring specify CEP5152 — see information request blank, pgs. 2-3

Problem — Manufacturer producing gaskets, washers and miscellaneous mechanical rubber goods had 32 vulcanizing presses in constant operation, with steam supplied to them at 120 to 125 pounds per square inch. The returning condensate, flashed in an open hot-well, was in a large measure wasted, and the heat from the 5 pound exhaust of a com-

pressor engine was completely wasted to atmosphere.

Solution — High pressure condensate return system was in-



ROUND CORNERS ARE STRONGER

The ordinates show the character of maximum stresses in a round corner of a vessel under pressure. Stress concentration is eliminated.

The ordinates show the character of maximum stresses in a square corner of a vessel under pressure. Note the increase in stress at the corner.

ROUND CORNERS ARE EASY TO CLEAN

Even the best brushes require extra time to clean accumulations gathered in the square corners.

In Blickman round corner construction the brush cleans the entire surface of the round corner.

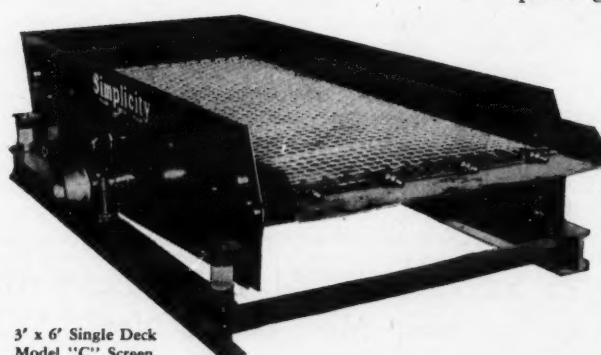
ALL ORDERS SUBJECT TO PRIORITY REGULATIONS

*Third in a series Interesting Brochure
written to speed "What to Look for When
war production. You Specify Stainless Steel
... sent on request.



When inquiring specify CEP5153 — see information request blank, pgs. 2-3

Simplicity Gyrating Screens



3' x 6' Single Deck
Model "C" Screen.

have been built and used since 1922 and today are operating in over 1400 different plants throughout the country. Simplicity screens are used for every type of operation requiring a separation into sizes, reclamation of products or dewatering of liquid pulps.

mesh separations in different chemical plant operations.

Have a Simplicity Engineer Check Your Requirements

SIMPPLICITY ENGINEERING COMPANY
DURAND, MICHIGAN

For Canada: Waterous Limited, Brantford, Ontario

When inquiring specify CEP5154 . . . see information request blank, pgs. 2-3



**SEAMLESS
SHOP CONTAINERS**
**DURABLE . . .
EASY TO CLEAN . . .**

● Hackney Seamless Shop Containers are cold drawn to shape without a weld or joint in their entire construction. The bottom is reinforced with a wearing ring. As a result they are exceedingly durable — able to stand up under the toughest use. Because of their seamless construction they are exceptionally easy to clean. Hackney Shop Containers are being used for plant handling of parts, pigments, etc., — and for batch mixing. They are made in various capacities. Write for full details today.

PRESSED STEEL TANK COMPANY

General Offices 1493 So. 66th St., Milwaukee, Wis.
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

When inquiring specify CEP5155 — see information request blank, pgs. 2-3

**"The best
pump buy we
ever made!"**



Above statement was made recently by a chemical process plant executive, referring to a Taber Vertical Pump. Why? Because, he says, we first made recommendations to suit the job instead of "just selling" a pump... AND because of the following Taber design features:

- 1 Deeper stuffing box that seals better against vapors or gases of Chemical Solutions.
- 2 Stuffing box kept out of liquid. Repacking interruptions are reduced to a minimum.
- 3 Longer bearings to compensate for non-lubricating properties of liquids or other Chemical Solutions pumped.
- 4 Larger shaft diameters that prevent damaging vibration.

WRITE FOR NEW BULLETIN V-837

TABER PUMP CO. (Est. 1859)
320 ELM ST. 5406 BUFFALO, N. Y.

When inquiring specify CEP5156 — see information request blank, pgs. 2-3

NEW SOLUTIONS OF PLANT PROBLEMS



STITCHER QUICKLY TURNS OUT STURDY CARTONS

**Stitcher Speeds Carton Assembly
Flaps Not Loosened by Moisture**

Wire faster than glue; unaffected by dampness; cleanliness and convenience pleases workers

Problem — Large canner of mushrooms had for some time been gluing shipping cartons. Moisture frequently had adverse affect on this adhesive closure. Also method did not lend itself to high speed, routine production methods and waste of material was high.

Solution — Equipment to stitch the cartons with stapling wire was adopted. These are easily operated, power driven units, quickly adjustable to carton size. Worker can maintain steady flow of cartons to stitching head and turn out a uniform job without strain or lost motion.

Results — Material and labor savings of approximately 30%. Stitching of 100 cartons performed in time required to glue 50. Staples give strong carton and provide a seal unaffected by dampness. Greater employee satisfaction with this easier, cleaner and quicker method.

ACME STEEL CO., Dept CEP, 2840 Archer Ave., Chicago, Ill.

When inquiring specify CEP5157 — see information request blank, pgs. 2-3

**Salvage of Old Drive Belts to
Help Meet Future Needs**

Old belts can be stripped, cut and spliced to required size for needed replacements

Problem — Paper mill needed a 20 inch, 6 ply belt 42 inches long. Because of the cost of new belt of such specifications operators were faced with an expenditure of considerable amount.

Solution — Representative of rubber manufacturer's distributor found that customer had an old 32 inch 8 ply belt on a drive no longer used. While the top and bottom plies were worn and cracked the belt offered definite possibilities. He stripped off the top and bottom plies and slit the belt into 20 inch and 12 inch widths. The 20

inch section was spliced into a 42 inch 6 ply endless belt. The 12 inch section was converted in 112 inches of 6 ply belting for various smaller drives.

Result — The 20 inch belt that was so urgently needed is now giving the required service as is the smaller belting also salvaged. Total cost to the paper mill \$36.10. Same total amount of new belting would have cost about \$279.00. Also of uppermost importance is the savings of 80 lbs. of crude rubber which would have been required to produce belting in equal quantity and quality.

B. F. GOODRICH CO., Dept. CEP, Akron, Ohio.

When inquiring specify CEP5158 — see information request blank, pgs. 2-3

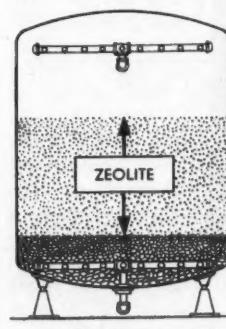
**New Manifold System Increases
Capacity of Water Softeners**

"Double check valves permit use of deeper zeolite beds without loss, channeling or packing

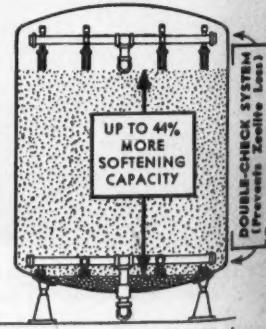
Uses — To increase the capacity of zeolite water softening equipment by use of a "double check" manifold system which permits use of deep beds of zeolite and provides adequate backwashing without loss of this material.

Features — No new tanks necessary. Packing and channeling prevented. Automatic backwash controller. Cuts regenerating salt costs.

Description — Restrictions of the depth of zeolite beds, because of backwash loss, has been the governing factor in capacity limitations. Insufficient backwashing has resulted in channeling and packing while increased flow has invariably washed zeolite into the drain. The "double check" system is designed to overcome both these difficulties. The "double check" assemblies are built into the upper manifolds. Lower check valves close off water to strainer when water is being softened or salt solution is being introduced. This prevents clogging strainers with foreign matter. When opened, ports in the top check give an even distribution of raw water over the entire zeolite bed. Lower manifolds (at bottom of tank) employ strainer nozzles with special slots to prevent loss of zeolite but permit free passage of softened water into service line. In backwash operation, water issues at relatively high velocity from the many slots in strainers of the lower manifold and is uniformly distributed as it passes upward through the zeolite bed. Direction of flow opens lower check valve, closes top valve and permits water to pass through strainer assembly to drain. Strainers prevent loss of zeolite and allow a rapid flow which expands and cleans the zeolite bed. Suspended impurities are carried off through a port in the top of the closed upper check valve but flow rate at this point is so reduced



ZEOLITE SOFTENER
new manifold system



CAPACITY INCREASED by
— before (left) and after

PRODUCTION

as not to carry off zeolite. All operations are controlled by means of a "solo" valve — backwashing, injection of salt solution and rinse water and delivery of soft water to service line. A related device that performs an important function is an automatic backwash controller which maintains a pre-determined correct flow of water for backwashing and prevents sudden surges of backwash water carrying zeolite to drain. System is available in required sizes for any type of zeolite manifold system. Descriptive bulletin No. 605 available upon request.

ELGIN SOFTENER CORP., Dept. CEP, Elgin, Ill.

When inquiring specify CEP5159 — see information request blank, pgs. 2-3

Damage Control Light Useful in Emergency Repairs

Sealed-beam lamp gives high intensity beam and accurate focusing

Uses — As a high intensity source of emergency light. Originally developed for use by damage control personnel on board ship it lends itself to service in industrial plants for the lighting of emergency repairs.

Features — High light output is obtained by application of an over-voltage through a sealed beam lamp normally rated at 6 volts.

Description — Available in three different types. While each has exclusive features all have the following construction in common: A lamp assembly which consists of a steel lamp housing to which is riveted a polished channel designed to enable vertical positioning of the lamp. An "on-off" switch is mounted on the lamp housing. A sealed-beam lamp, Navy type SB — 1 is responsible for the high intensity beam and accurate focusing. Unlike automobile sealed-beam headlights, this lamp has a clear face, which transmits the light without diffusion. The lamp contained in the housing, is held in position by means of a steel bezel or clamping ring, a stainless flanged washer and a gasket. Cover and attached bracket hold lamp housing and handle. Model 9991 uses four Navy type wet cells inclosed in a plastic material of spill-proof construction. Charge ball indicators are visible through window. No. 9992 is similar in appearance but has a deeper case to house 6 dry cells. No. 9993 is supplied with an adjustable lamp frame for attaching the lamp assembly and handle to a standard automobile storage battery — 7½" x 9" to 13" in length and maximum height of 8½". Bulletin available on request.

F. W. WAKEFIELD BRASS CO., Dept. CEP, Vermilion, Ohio.

When inquiring specify CEP5160 — see information request blank, pgs. 2-3



DAMAGE CONTROL LIGHTS . . . for use in emergency repairs

"SURE I WANT MORE TONNAGE," HE TOLD ME*



*THE REX MAN



" . . . BUT I DON'T WANT HIGHER COSTS!"



① "IT'S A TOUGH PROBLEM," I agreed — "but Rex idlers can beat it! They can step up the capacity of your present conveying system, and, because they are relatively low in cost, they make it practical for you to build additional conveying facilities right now What's that?"



④ "WHEN I SAY THAT" Rex idlers can help you handle more tonnage faster, I'm just agreeing with hundreds of engineers who are using them for that reason. Talk about experience — look at this view of one section in a 9.6 mile Rex belt conveyor installed on the West Coast recently!



② "HOW CAN THEY STEP UP capacity? Well, your old-fashioned idlers cause many a shutdown for repair and maintenance, don't they? Rex idlers—made of seamless tubing, and with these dustproof, grease-retaining seals, just naturally eliminate all but minimum maintenance!"



⑤ "FOR HANDLING YOUR MATERIALS throughout your plant, don't overlook the fact that Chain Belt Co. makes a complete line of Rex bulk materials conveying equipment. This includes leakproof steel apron feeders, as well as Rex elevators, (super capacity or standard)."



③ "THIS MEANS UNINTERRUPTED service — more capacity! Check over the design features in our Catalog No. 444, and you'll see what I mean. Rex idlers roll on high quality Timkens, for instance—and you know what they can do to eliminate wear, wobble and friction."



⑥ "WELL, I GOT WHAT I ASKED FOR," he told me when I called on him several months later. "I've already started an S. O. R. (standardize on Rex) program throughout the plant. You were right when you said we could handle more tonnage by using the right conveying equipment."

REX CONVEYORS

Rex Conveying and Engineering Products Division, Milwaukee, Wisconsin

CHAIN BELT COMPANY OF MILWAUKEE

*Rex Chain Belt and Transmission Division, Milwaukee, Wisconsin
Baldwin-Duckworth Chain Belt Division
Springfield and Worcester, Massachusetts*

BE SURE TO MAIL THIS COUPON

CHAIN BELT COMPANY
1694 W. Bruce St., Milwaukee, Wisconsin

Send complete information showing how these economical Rex idlers can step up our conveying capacity.

Name

Firm

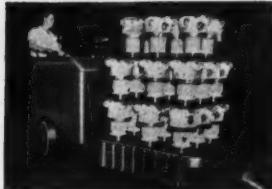
Address

City & State

BAKER TRUCKS can help you to increase plant capacity

Here's how —

1. **TIERING IN WAREHOUSES** — By storing two and three high (or higher) more floor space can be released for production.
2. **KEEPING MATERIALS MOVING** — Man and machine time can be conserved by having material at hand when and where needed.
3. **YARD STORAGE AND HANDLING** — Bulky dies and material need not occupy valuable inside floor space where Baker Trucks are in service.
4. **USING REMOTE SPACE** — Baker Trucks reduce distance within the plant, and make practical the use of remote areas.
5. **KEEPING MACHINES RUNNING** — Servicing machines, die changing and millwright work done with BAKER TRUCKS reduces idle machine time.



The BAKER material handling engineer can help you

He is a specialist, and knows how to get the most out of material handling to speed plant production. He is at your service.

BAKER INDUSTRIAL TRUCK DIVISION of the Baker Raulang Company
2163 WEST 25th STREET • CLEVELAND, OHIO

Baker INDUSTRIAL TRUCKS

When inquiring specify CEP5162 — see information request blank, pgs. 2-3

free book describes IMPROVED TRAPPING for unit heaters



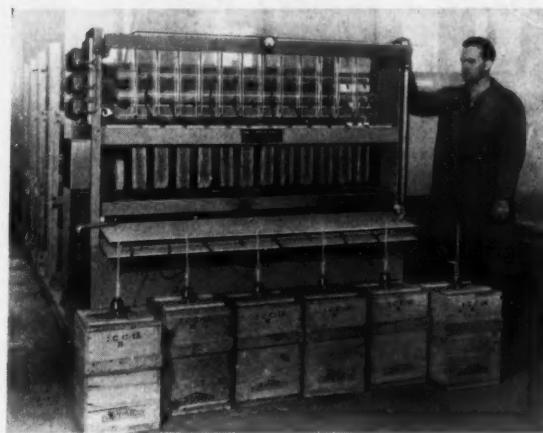
Do you want to know the latest methods of trapping unit heaters? Are you interested in checking the efficiency and economy of your unit heater installation? Then we invite you to send for the newest edition of "How To Choose A Steam Trap." In this book are pages devoted to improved trapping for unit heaters—the importance of correct trapping—why rapid air removal is necessary to prevent corrosion—correct method of selecting the proper size trap for all purposes to get maximum results with minimum fuel. "How To Choose A Steam Trap" is complete with tables giving specifications, capacities, and pressures. It shows you why the Super-Silvertop Steam Trap with its simplified piping, guided bucket, and smooth large passages is the modern, better trap. Send in your request today for a copy with our compliments.

THE V. D. ANDERSON COMPANY
1954 West 96th Street • Cleveland, Ohio

When inquiring specify CEP5163 — see information request blank, pgs. 2-3



EQUIPMENT FOR PRODUCTION



ELECTROLYTIC UNIT . . . makes bleaching solution

New Unit Makes Bleaching Solutions on Location

Chlorine, Sodium Hypochlorite, Caustic Soda produced economically in plant

Uses — For producing chlorine, caustic soda and sodium hydrochlorite. Has application in chemical manufacturing plants where the chlorine can be used directly as such in processing operations. Also of practical use in textile processing.

Description — Machine operates from saturated salt solution and provides one pound of chlorine from $3\frac{1}{2}$ lbs. of salt and 2 kwh. of current. Also produces caustic soda and is designed to make strong stable, fresh hypochlorite solution of 5% strength or greater. Machines in several sizes and classifications. Equipment is identified as "Emar" electrolytic bleach unit.

EMAR ELECTRO-BLEACH EQUIPMENT, Division of Embree Mfg. Co., 10 W. Mravlag Pl., Elizabeth, N. J.

When inquiring specify CEP5164 — see information request blank, pgs. 2-3

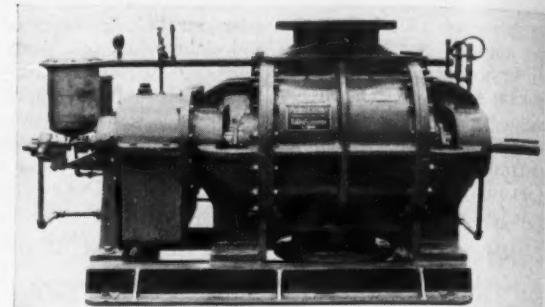
Heavy Duty Gas Pump Handles Clean, Foul, Corrosive and Inert Gases

Unit has special type packing glands, forced feed lubrication

Uses — As an exhauster in the conveying of granular and other materials through the medium of high velocity air stream. Handles clean, foul, corrosive, inert or other gases under vacuum or suction to 12 lbs. differential pressure.

Features — Shallow stuffing boxes of special design in the head plates which isolate the bearings from the pressure of vacuum occurring in the pump proper. Forced feed lubrication system including lube-finer, air filter, oil pressure gauge, oil pump driven from the exhauster shaft through chain coupling; flexible and stationary oil piping with gear housing enlarged on the under side to provide oil storage.

Performance — Exhauster operates at a differential not



HEAVY DUTY EXHAUSTER . . . conveys granular materials through medium of high velocity air stream

to exceed twelve (12) lbs. or 24 ins. across the pipe. Volumetric efficiency is 80 to 90% depending on the size unit and the style of service. Mechanical efficiency is approximately 93%.

Description — Design utilizes top inlet and bottom discharge which throws out entrained impurities which might come over with the gas or air exhauster. Eliminates the possibility of oil being drawn out of the bearings or gear housing by the suction occurring in the pump. Made of best grade close grained cast iron accurately machined. Impellers are pressed and keyed to shafts which are made of No. 4140 annealed stress relieved ground and polished chrome molybdenum steel. Impellers are accurately machined and balanced to run without vibration. Bearings are of anti-friction type, mounted in cartridges which provide for factory location at all times, and enables the exhauster to be operated top inlet, bottom discharge, or bottom inlet, top discharge according to the piping requirements. Timing gears are of the double helical herringbone type made of electrical furnace gear metal of wide face and running in a bath of oil. This unit is recent addition to complete line of gas pumps, blowers and exhausters. Literature available upon request.

SUTORBILT CORP., Dept. CEP, 2008 East Slauson Ave., Los Angeles, Calif.

When inquiring specify CEP5165 — see information request blank, pgs. 2-3

Coal Pulverizing System for Boilers, Stills, Kilns, Driers

Increases efficiency and results in considerable savings in fuel costs

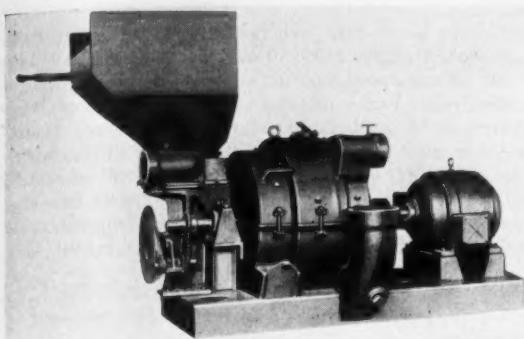
Uses — For firing furnace, boilers, stills, kilns, dryers, retorts, incinerators. Pulverizing bituminous coal, lignite oil still coke, pitch, sewage sludge.

Features — Maintained pulverization due to stage air separation. Ability to feed and pulverize fuels with high moisture content or dry fine fuels that often flood through feeders. Effective tramp iron separation and removal. Very wide operating range.

Performance — In firing boilers of 100 h.p. or more continuous rating of 200% easily maintained. Will pulverize hard pitch (250 degrees melting point) and burning of this pitch gives a uniform controllable heat with no ash. Have improved fuel ratio of shaft lime kilns 40% and more. Substantial cuts in fuel costs of batch type oil stills.

Description — Pulverization is accomplished by impact —

PRODUCTION



UNIT PULVERIZER . . . cuts fuel costs, improves efficiency

not attrition — of the paddles on the coal, coal on coal and coal on the liners. The primary air-preheated sufficient to dry the coal — taken in through the feeder, removes the pulverized coal from each against the centrifugal effect which holds the oversize particles in each stage. The air separation plus stage pulverization results in minimum power consumption and maximum life of the pulverizing elements. Feeder is a new development of the revolving table feeder. Delivers a constant, controlled volume to the pulverizer. Fuel rate may be varied by control lever. Shell and base are formed in a unit of heavy steel plates. Large chrome-molybdenum alloy steel shaft is carried on oversize ball bearings on small units and on roller bearings on larger units. Discs and fan can be removed or replaced on the rotor without disturbing the bearing assemblies, hubs or couplings. Paddles are heat treated alloy steel castings. Liners of wear-resisting steel may be easily replaced without disturbing the rotor. Fan is constructed of welded steel with heavy blades. It is designed to give proper performance without vibration. These pulverizers are built in units to meet purchaser's needs. They may be straight motor driven, with both motor and turbine drive to meet varying load conditions, with forced draft fans complete where pre-heaters are installed on the boiler, or where furnace requirements may necessitate use of forced draft burners. May be mounted on wheels for portability if desired. Frequently one or two units may operate two or three boilers.

THE SIMS CO., Dept. CEP, Erie, Pa.

When inquiring specify CEP5166 — see information request blank, pgs. 2-3

Non-Clogging, Non-Corroding Chemical Feeder

Twelve-page-and-cover magazine style booklet contains highly practical presentation of proper methods of application of corrective chemicals to water by means of specialized proportioners. Text and diagram emphasize that this actuating and proportioning instrument does not have chemicals or water flowing through it, eliminating clogging and corrosion. Variable and constant flow applications and multi-feeding of chemicals are discussed. Illustrations of actual installations and tables giving the specifications of the sizes in which the several models are offered complete the volume. Booklet 101 — B available upon request.

AMERICAN WATER SOFTENER CO., Dept. CEP, Lehigh Ave. & Fourth St., Philadelphia, Pa.

When inquiring specify CEP5167 — see information request blank, pgs. 2-3



*...excerpt from a
letter marked "PERSONAL"*

I've marked this letter "Personal," not as a trick to attract your attention, but because it must take the place of a personal call that I've tried to find time to make—without success.

We are busy at Foster. In a few all-too-short months, we have changed our entire organization from a private enterprise to a tireless war machine. We, too, have gone all out—not merely for defense, but for victory.

We realize that this change has effected our "normal" business relations with many of our customers. But these are not "normal" times . . . we must avoid too little, too late—war work must come first here just as it does in your plant.

We have not forgotten our old customers. We can still make valves for you—but if we seem slow in answering your inquiry; if our delivery dates seem unreasonable, be assured that it is not indifference, not a lack of appreciation of past favors.

It's simply that we're "in" on this business of winning the war—and when the war is won, we will be back "on schedule."

FOSTER ENGINEERING
Company

PRESSURE REGULATORS . . . RELIEF AND BACK PRESSURE VALVES . . . AUTOMATIC STOP AND CHECK VALVES . . . ALTITUDE VALVES . . . DAMPER REGULATORS . . . FAN ENGINE REGULATORS . . . PUMP GOVERNORS . . . TEMPERATURE REGULATORS . . . LIQUID LEVEL CONTROLLERS . . . FLOAT AND LEVER BALANCED VALVES . . . NON-RETURN AND TRIPLE DUTY VALVES . . . VACUUM REGULATORS OR BREAKERS . . . SIGHT FLOW BOXES . . . STRAINERS . . . SAFETY VALVES . . . SHEERS

109 MONROE STREET • NEWARK, N. J.

When inquiring specify CEP5168 . . . see information request blank, pgs. 2-3

CEP-501



We've Spilled the WORKS!

All the works—two discs and two wedges—only four parts—the entire working part assembly of a Darling Double Disc Gate Valve. Any part can be replaced quickly and inexpensively without removing the valve from the line.



Darling Gate Valves come in Fully Revolving Parallel Seat Double Disc, also in Taper Seat—Slotted and Solid Wedge types. In service pressures up to 3000 pounds they are available in Cast Iron, Bronze, Forged Steel, Cast Steel and Corrosion Resistant Alloys.

Wire or Write for Full Information.



TRADE
MARK

DARLING VALVE & MANUFACTURING CO.
WILLIAMSPORT, PA.

When inquiring specify CEP5169 — see information request blank, pgs. 2-3

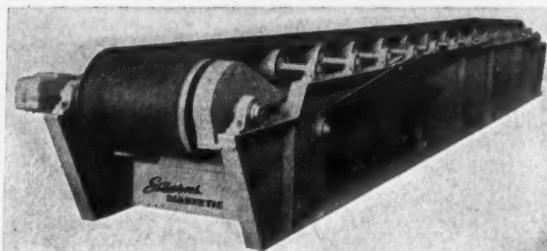


Consolidated offers a complete line of Automatic Scales and Bag Closers for either Textile or Paper Bags. Write for specific information.

CONSOLIDATED
PACKAGING MACHINERY CORP.
1400 WEST AVENUE
BUFFALO, N. Y.

When inquiring specify CEP5170 — see information request blank, pgs. 2-3

EQUIPMENT FOR PRODUCTION



BELT AND PULLEY UNIT . . efficiently reclaims metals

Metal Recovery Unit Combines Picking Belt, Magnetic Pulley

Bulky junk removed by hand before reclaiming
brass and secondary metals

Uses — This combination picking belt and magnetic separator is designed for the purpose of reclaiming brass and secondary metals from assorted junk and metallic refuse of all kinds.

Features — The arrangement of picking belt ahead of the magnetic pulley provides means for sorting the material by hand to eliminate bulky junk of all kinds before reclaiming the brass from the remaining metallic refuse.

Description — Separator can be designed in sizes to suit the particular application. Unit illustrated is 22 ft. long, 30 in. high and has an 18 in. endless, vanner edged belt operating at 30 feet per minute and supported by idler rollers. The entire machine is equipped with anti-friction bearings throughout. Drive of this magnetic pulley picking belt combination is by motor reducer and generator installed within the machine and equipped with covers that can be opened to provide access to the drive.

STEARNS MAGNETIC MFG. CO., Dept. CEP, Milwaukee, Wis.

drum type controller, which is interlocked automatically with the driver's seat and brake foot pedal. If controller is left in any speed position, handle must be brought to neutral, with brake released and operator seated before power can be applied. Four wheel brakes are mounted on worm shaft providing equal braking on all four wheels. This model (NTTD) offers a draw bar pull of 800 lbs. normal, 3600 lbs. ultimate. Overall length 84 ins., wheel base 48 ins., overall height 59 ins. Compartment for either side or top removal of battery available.

CRESCENT TRUCK CO., Dept. CEP, Lebanon, Pa.

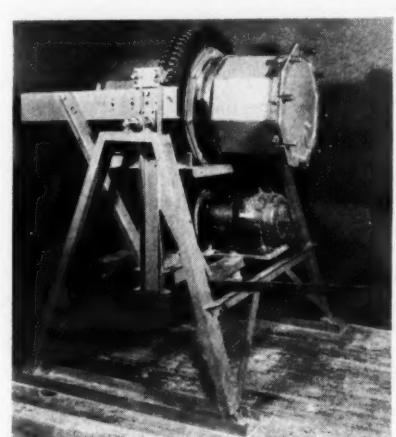
When inquiring specify CEP5172 — see information request blank, pgs. 2-3

Grinding Mill Uses Novel Means of Supporting and Turning Drum

Tire encircling drum contacts motor driven pulley to transmit power; decreased noise and vibration, drum easily tilted at any time

Uses — In general applications to processing where use of grinding mills the ball or pebble type is indicated.

Features — Designed to provide equipment that is compact, easily operated with a minimum of noise and vibration and maintenance cost, and that has a greater material capacity per batch in proportion



GRINDING MILL . . has novel mounting and power transmission

to the weight of the machine. Drum can be easily tilted when still or in operation. Filling and unloading made easy.

Operation — Drum is horizontally supported for axial rotation within a cradle like framework. Mid-section of drum is encircled by a tire rim, welded on. Tire is attached to rim and rests upon peripheral edge of driving disc or pulley which is rotated by a motor.

Description — Tumbling drum is adapted for support by axial rotation — usually on a horizontal basis within a cradle like structure. The main members of this cradle comprise two large vertical channeled side members properly spaced to accommodate the drum. These vertical members are connected at their upper portions by a horizontally placed "U" shaped member and at their lower sections by a large horizontal platform member which holds a bed-plate. This plate supports the motor which has its drive shaft coupled to a set of speed reduction gears. A driving shaft connects to a pulley. The frame is adapted to be rocked at times to impart transverse movement and for tilting the drum. In this connection split or pivot bearings are provided at the top of the vertical channel members. Also at the top of each vertical member is a plate secured by bolts. Each plate has a right angular outwardly projecting trunnion, having a reduced

Electric Heavy Duty, Four Wheel Drive, Safety Control, Tractor

Two motors, extra heavy construction, four wheel
external expanding brakes



ELECTRIC TRACTOR . . flexible
operation, extra power, greater traction

from standard plates and shapes — extra heavy construction, hot riveted and welded into rigid mono-unit. Automatic safety control.

Description — Travel is controlled by a lever operated

PRODUCTION

portion fitting into the bearing. The pulley is centrally disposed in a transverse vertical plane with the pivot bearings aforementioned. To provide resiliently balanced support that is non-vibratory the drum is encircled with a rim on which is placed a pneumatic tire which rests upon the peripheral edge of the pulley or driving disc. The end of the drum, facing toward the cross member of the horizontal U frame incorporated in the cradle, is provided with an outwardly projecting spindle, which is axially located and forms a shaft by which the drum may be flexibly coupled and journaled in the frame. This properly retains the drum against axial endwise or side-wise movement and provides a journal for rotation of the drum. Side rollers are placed at the top of each vertical channel member for the purpose of maintaining the drum in intimate engagement with the pulley and longitudinal alignment of drum and pulley. An auxiliary safety ring encircling the drum in close proximity to the tire is also located above a cross bar at a very slight clearance. Its function is to prevent axial displacement or appreciable fall and damage to drum and parts in event of tire blow-out. A long notched bar at the bottom provides for positioning the drum as provided by the pivotal bearings. A special drum cover provides for air-tight closure. A conical cover is provided as an accessory that is easily attached to the drum for unloading through a spout, decreasing dust to a minimum and preventing the accidental removal of balls or pebbles with the batch.

BUTTON CORP. OF AMERICA, Dept. CEP, 49 Dickerson St., Newark, N. J.

When inquiring specify CEP5173 — see information request blank, pgs. 2-3

Can Fillers Have Roller Scale Platforms and Electric Trips

Handle almost any liquid that will flow through pipe, position of filling valve adjustable both vertically and horizontally

Uses — As direct pressure can fillers for handling almost any liquid that will flow through a pipe. Some models are adaptable to filling bombs and shells as well as cans. **Features** — Models have exceptional flexibility and easy adjustments permit two or more of them to be grouped together for a multiple unit.

Description — A wide variety of scale types are available in capacities from 10 to 1500 lbs. to accommodate containers of any size and weight. Use of angle iron in the rectangular frame permits adaptation to individual requirements as to distance from floor to top of platform, length of dormant platform. Some models offer roller platform and electric trip, others flat platforms with either electric or mechanical trip. Roller scale sections are elevated slightly high than the dormant sections, making filled cans easy to move away from scale after valve closing. Position of filling valve is fully adjustable both vertically and horizontally to reach any container opening or height. Nozzles can be supplied in all diameters to fit container orifices. Valves are available to fit 1", 1½" and 2" supply lines and can be supplied in metal or alloy to meet corrosive conditions. Information regarding individual requirements available upon request.

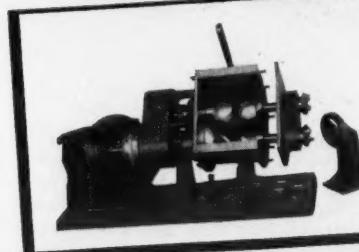
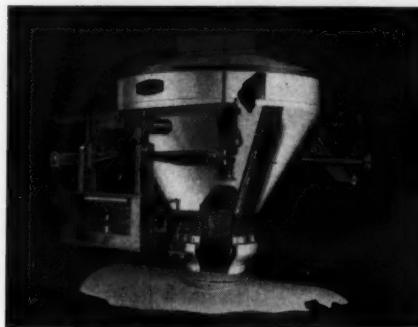
VOL-U-METER CO., Dept. CEP, 75 Wilbury Place, Buffalo, N. Y.

When inquiring specify CEP5174 — see information request blank, pgs. 2-3

READCO Material Handling Systems ENGINEERED to increase efficiency

Dump Bins, Elevators, Storage Bins, Conveyors, Sifters and Blenders

Compact design, all metal construction, built to suit exact requirements. Flush panels eliminate dirt traps. Dump bins or blending bins for mixing different powders through variable feed conveyors. Screw or bucket type elevators. Units built to any capacity desired.

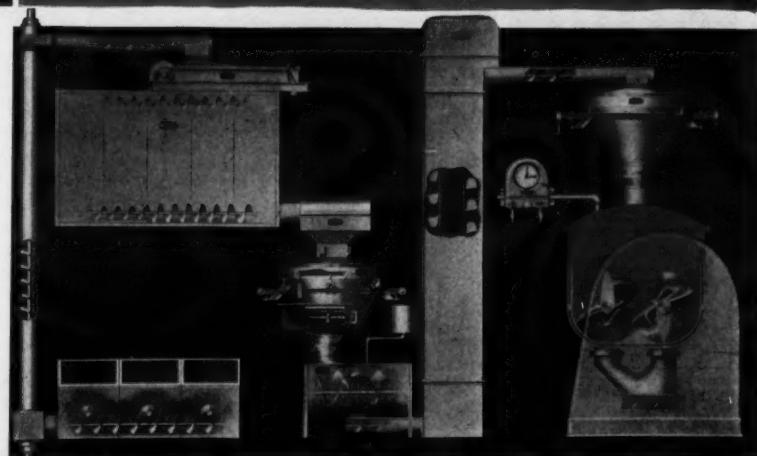


1. To prevent loss of material.

2. To give you minimum handling costs.

3. To provide orderly processing by line production.

4. To provide cleaner plant conditions.



Readco Dustless Weigh Hoppers For Automatic Weighing

Patented dust controlling mechanism prevents loss of material as it allows accurately weighed hopper contents to discharge into any closed vessel. Dial or beam-scale equipment with automatic control. Stationary or trolley mounted.

For Laboratory Mixing

Readco laboratory mixers are designed so that mixing bowl can be dismantled easily and cleaned without use of wrenches or tools. Furnished with or without jackets. Built of common metal or any commercial alloy. Working capacities: 1, 3 and 6 quarts.

READ

MACHINERY CO., INC., YORK, PA.

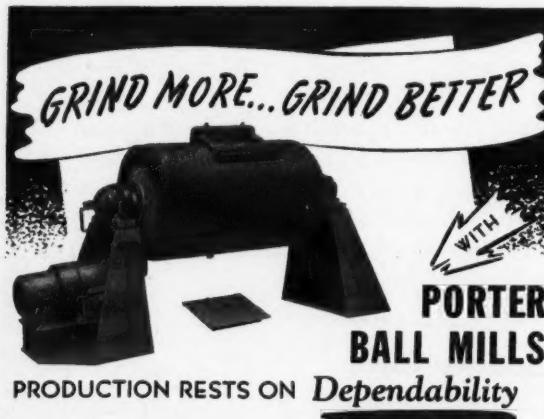
Material Handling Equipment • Pilot Plant Mixers • Bottom Discharge or Tilting Bowl Mixers • Blenders • Sifters • Shredders • Acetyulators • Vertical Mixers • and Pharmaceutical Equipment

224

OLIVITES IN TWO ORDERS ... something of a record in the purchase of acid-handling pumps



When inquiring specify CEP5176 — see information request blank, pgs. 2-3



Porter Ball Mills are dependable because they are designed, engineered, and constructed for speed and economy of operation. They have all-steel heads and all-welded steel stands. They keep batches free from contamination. You get faster production and finer dispersions with Porter Ball Mills. Available in a complete size range . . . one can be obtained for your specific operations.



H. K. PORTER COMPANY, INC.
PITTSBURGH • PENNSYLVANIA

Where the Famous PORTER LOCOMOTIVES are built

When inquiring specify CEP5177 — see information request blank, pgs. 2-3

PRODUCTION

Simplified Hot Air Coal Heater Aids Fuel and Metal Shortage

Practical replacement for oil, gas units; uses 40% less metal than comparable boiler systems

Uses — Where a direct fired type of heater is desired for industrial use. Being coal fired these units are especially suitable for use in localities where restricted oil or gas supplies or other factors make it desirable to employ coal as fuel.

Features — Simple method of warm air distribution and the construction of the unit itself effect a savings of from 40 to 50% in the amount of steel required for a comparable boiler plant.

Description — Unit is entirely self-contained, having its own combustion chamber and distributing warm air either directly from outlet vents into the area to be heated, or when partitions or obstructions make it necessary, through a simple duct system. Corrugated combustion chamber with special fins and deflectors makes possible heat transfer to a moving air stream about the same rate per square foot of surface as is obtained in the boiler and transmission of heat from combustion chamber to water. Combustion conditions are such that there is plenty of furnace volume for the fuel to burn completely without smoke before the gases strike the cold



"NO HIDING PLACE HERE FOR ENEMY AGENTS!"

When the enemy agents that attempt to hamper your production hide in the guise of pipe line corrosion, contamination, scaling and resistance to flow — you have a job for PYREX Piping.

In vitally important chemical processes . . . in food handling . . . wherever these attacks can be dangerous, PYREX Piping brings their destructive efforts into the open.

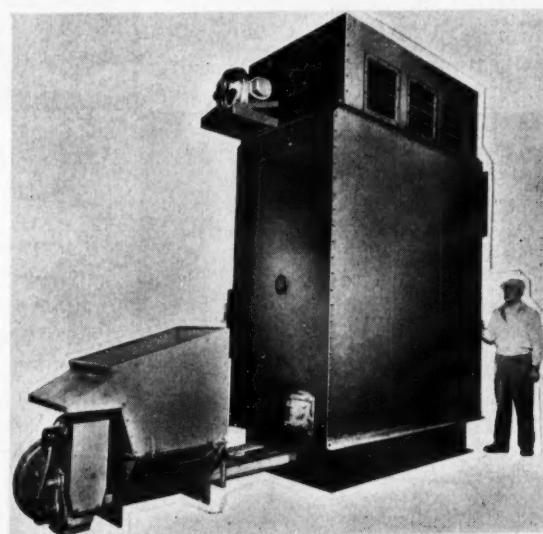
On constant 24-hour guard duty, PYREX Piping is always ready to tell you at a glance the condition of pipe line and contents. PYREX brand Industrial Glass is transparent . . . and it maintains that transparency longer under the most adverse conditions. PYREX brand Industrial Glass has remarkable resistance to all acids and alkalies in solution (except HF). It is remarkably resistant to thermal shock and can be flushed clean with hot water, hot acids or steam. It may be the answer to your most pressing production problem.

Write — Corning Glass Works, Corning, N. Y. — Branch Offices: New York, 718 Fifth Avenue; Chicago, Merchandise Mart.

"PYREX" is a registered trademark and indicates manufacture by Corning Glass Works



When inquiring specify CEP5179 — see information request blank, pgs. 2-3



DIRECT FIRED COAL BURNING HEATER

surfaces. Tightly welded combustion chamber prevents the infiltration of excess air. Furnace temperatures kept down because large portion of heater surface above refractory is in sight of fire. Most of the heat recovered is by means of radiation into this black surface in the upper part of the combustion chamber. Bridgewall is also cooled by means of a duct through its center which conducts a flow of air induced by vanes in the air stream from one side of the heater through the bridgewall to the opposite side. Made in eight sizes from 750,000 to 4,000,000 BTU output per hour. Equipped with hopper or bin feed stoker; also in hand firing type with under-grate fan.

DRAVO CORP., Dept. CEP, Pittsburgh, Pa.

When inquiring specify CEP5178 — see information request blank, pgs. 2-3

LOW COST SCREENING OF GYPSUM ROCK



• The Savannah, Georgia, plant of the National Gypsum Co. converts 500 tons of gypsum rock into "GOLD BOND" Special plaster and plaster board every 24 hours. After the first crushing, most of this material is screened by a Link-Belt 2-deck vibrating screen. For 2½ years, a veritable torrent of crushed rock has poured through this screen, which has given continuous trouble-free operation at rock-bottom cost. As in numerous similar installations, the rugged, simple design of the Link-Belt vibrating screen has proved the answer to economical production.



ASK FOR THIS BULLETIN
Read full details of features of Link-Belt Vibrating Screens that assure smooth, low cost performance. Ask for Bulletin No. 1762.

LINK-BELT COMPANY
2045 W. Hunting Park Ave., Philadelphia

WRITE TODAY!
LINK-BELT
Vibrating Screens

When inquiring specify CEP5180 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

KINNEAR BIFOLD DOOR

Rugged, quick-acting, space-saving



This heavy-duty, smooth-working door is speeding up service at low cost in old and new buildings of all types. Requires very little operating space. Offers large sash area, permitting plenty of light. Composed of two sections hinged horizontally and pivoted from brackets at upper corners. Clears entire opening; saves floor and wall space; remains out of the way. Torsion spring counterbalance assures easy, time-saving action. All sizes; wood or all metal construction. Motor control if desired. Easy to install. Write today for details. The Kinnear Mfg. Co., 2200-50 Fields Ave., Columbus, Ohio.

SAVING WAYS
IN DOORWAYS

KINNEAR
ROLLING DOORS

When inquiring specify CEP5181 — see information request blank, pgs. 2-3

SAVE VITAL ALLOYS
And REDUCE MATERIAL COSTS

Use *Silver-Ply**
JESSOP *Silver-Ply**
STAINLESS-CLAD STEEL



Jessop Silver-Ply Stainless-Clad Steel offers the acid-resisting properties of solid stainless on the clad side and 20% cladding actually conserves 80% critical chrome and nickel, with as much as 45% savings in material costs.

If your operations involve processes where corrosion of equipment and contamination of the product must be avoided, Silver-Ply Stainless-Clad Steel may help you. It is furnished in specified claddings from 5% to 50%. Write for descriptive booklet.

*Manufactured under U. S. Pat. Nos. 1,997,538 and 2,044,742

Jessop Steel Company
Washington, Penna.



JESSOP STEELS FOR AMERICA
AND HER ALLIES
CARBON • HIGH SPEED • SPECIAL ALLOY • STAINLESS • COMPOSITE STEELS

When inquiring specify CEP5182 — see information request blank, pgs. 2-3

PRODUCTION

Plastic Fittings & Tubing Form Non-Corrosive Pipe System

Both have high tensile and bursting strength; fittings can also be used with metal tubes

Uses — For use in connection with plastic tubing, such as the manufacturer also produces, and also on metal tubes to provide chemically resistant piping systems. The use of plastic tubes and fittings, however, overcome difficulty encountered in securing corrosion resistant metals.

Features — Fittings have high tensile and bursting strength. Non-corroding and non-aging. They are non-conductors of electricity and prevent formation of galvanic couples.

Description — Fittings and tubing designed for combination into piping systems are made of "Saran" thermoplastic are now available for tubing sizes $1/8$ to $3/8$ O.D.

WESTERN FELT WORKS, Acadia Synthetic Products Div., Dept. CEP, 4115 Ogden Ave., Chicago, Ill.

When inquiring specify CEP5183 — see information request blank, pgs. 2-3

Resilient Form-Fitting Material for Packing Fragile Products

Made in honey-comb pattern of kraft stock in rolls
and pads; light weight, economical

Uses — Designed to provide a protective packing for a wide variety of articles. Unusually adapted to give all around protection to glass, china and products or containers that are fragile or brittle. Highly serviceable in "nest packing" and as blankets for lining and pads for ends of boxes.

Features — Resilient material naturally conforms closely to cylindrical, spherical, double curvature and irregular surfaces. Uniformity and light weight makes it easy to



NEW PACKING METHOD . . . provides shock-proof
for delicate items

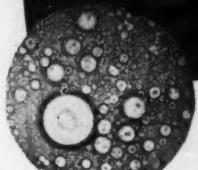
handle and apply. Mesh design reveals the article packed, assuring instant identification and accuracy in handling. Article is protected up until actual use. Packing has merchandising and customer service appeal.

Description — Resilient material, made of kraft stock, expanded into a honey-comb pattern. This expansion process imparts an unusual cushioning property to this pack — permit experimental use sample roll, including shipping, is available for \$1.

RESEARCH PRODUCTS CORP., Dept. CEP, Madison, Wis.

When inquiring specify CEP5184 — see information request blank, pgs. 2-3

Here's What We Mean By
COMPLETE Dispersion
when you use a
**PREMIER
COLLOID MILL**



With the Premier Colloid Mill, you can break down liquids into such fine dispersion as to multiply the number of contact surfaces a thousandfold. This increased interfacial contact speeds up chemical reactions, in some cases making them instantaneous. Manufacturers find that this reduces costs and increases profits in washing, extracting, aging, decolorizing or deodorizing processes.

In those processes wherein chemical reactions begin as soon as the formula is compounded, the Premier Mill disperses the liquid in such fine particles that it subjects minute sub-divisions of the liquid to immediate contact with each other. By this means, the aging of perfumes, for example, is greatly accelerated. The application of the principles in other industries through the use of mechanical colloid chemistry may have revolutionary effects on quality, production and profit.

Similarly, the Premier Mill can disperse solids suspended in liquids to almost any degree desired. Solids may be dispersed to their original formative particle size. When dispersion is attained, the use of dispersing agents keeps the particles from coalescing. The top two of the photo-micrographs at the left illustrate a standard emulsion before and after being processed in a Premier Colloid Mill; the lower two give the before and after picture of the processing of pigments in a Premier Colloid Mill.

WHY PREMIER COLLOID MILLS DELIVER SUPERIOR PERFORMANCE

- **SIMPLE OPERATION** — One moving part. Rotor has no teeth or complicating mechanisms.
- **EASY ADJUSTMENT** — The micro-meter adjusting ring makes possible adjustments from ".001" or less to ".125".
- **ECONOMY** — Premier Colloid Mills are easy to clean. They operate continuously and are made for large output with low power consumption and lowered labor cost.
- **CONTROLLED QUALITY** — All form treatment of every particle of material being processed. Every Premier Mill has positive, dependable adjustment for absolute control of quality and production.



a **FREE** copy of a new
booklet, IE 8, "Better
Products—More Profitably
Processed," will be sent
upon request.

PREMIER MILL CORPORATION

218 GENESSEE STREET, GENEVA, NEW YORK
New York Sales Office: 110 E. 42 Street, New York, N. Y.

Premier
Colloid
Mills

When inquiring specify CEP5185 — see information request blank, pgs. 2-3

NO WAITING for TILE TANKS



For storage and processing of non-corrosive products you will find tile tanks built by Stebbins offer the following advantages:

- (1) The durability of reinforced concrete
- (2) The cleanliness of glazed tile construction
- (3) The economy of construction
- (4) The vital advantage of quick delivery

They are installed by an organization which has specialized for more than half a century in the installation of acid and corrosion resistant linings.

SEMC
Stebbins Engineering and Manufacturing Company
WATERTOWN, NEW YORK

When inquiring specify CEP5186 — see information request blank, pgs. 2-3

MITCO

**THE OPEN
STEEL
FLOORING
THAT'S 90%
OPEN**



Typical Mitco installation in large central station.

With its rectangular openings . . . and freedom from bolts and rivets . . . Mitco Open Steel Flooring provides an open area of 90%, insuring maximum light and ventilation. Its square edge steel bars provide strong and safe walking surface. Each Mitco panel is a strong, integral unit over which concentrated loads are distributed without lateral deflection.

Write for complete data on Mitco Open Steel Flooring, Mitco "Shur-Site" Treads for stairs, ladders, etc., and Mitco Armorgrids for industrial floors, loading platforms, etc.

HENDRICK MANUFACTURING CO.

CARBONDALE, PENNA.

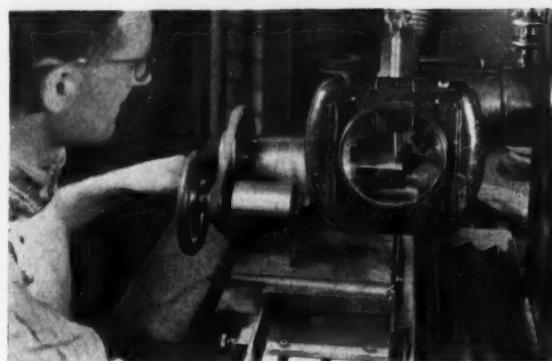
30 CHURCH ST., NEW YORK

Sales Offices In Principal Cities

Also manufacturers of perforated metals, perforated metal screens and decorative grilles; light and heavy steel plate construction.

When inquiring specify CEP5187 — see information request blank, pgs. 2-3

PRODUCTION



MAGNIFYING DEVICE for precision machining . . . has a safety lens to protect one for magnifying

Magnifying Lenses for Inspection, Assembly and Precision Machining

All models respond instantly and accurately to wide range of adjustments

Uses — Each of these four new models of magnifying lenses are designed to meet certain requirements for inspection, small parts assembly, bench work and precision machining.

Features — Flexibility and precision in adjustment is found in all models.

Description — Model 96ZC of this series has 2 magnifying lenses (top lens 5 in., lower lens 4 in.), lower lens adjustable to proper focus. Lenses lighted separately which permits using one or both lenses as occasion demands. Head is balanced to bracket and can be instantly put into position over wide area. For inspection work. Model 89ZC has one magnifying lens (5 in. diameter), head balanced to bracket and convenient for use over a wide bench area in small parts assembly, bench work and also inspection. Model 44ZC has one lens (4 in. diameter) and is also adjustable for bench operations. Model 89ZC has one magnifying lens (5 in. diameter). It is fitted with a safety lens to protect magnifying lens when required. Equipped with universal brackets. Designed for use in precision machining operations. These magnifying devices are named "Super Sight."

BOYER CAMPBELL CO., Dept. CEP, 6540 Antoine St., Detroit, Mich.

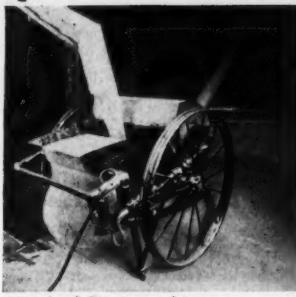
When inquiring specify CEP5188 — see information request blank, pgs. 2-3



BRACKET STYLE LENS . . . adjustable over wide area for bench work and small parts assembly

THROW IT!

For
QUICK EFFICIENT CARLOADING



The S-A BOX CAR LOADER

It's not only efficient but patriotic in these days to load a car quickly without labor and get it on its way. The S-A Loader & Piler takes practically any loose bulk material into its hopper and THROWS IT the required distance—tramped and neatly piled. It's the speediest way to fill cars or stock pile.

Write for Data Bulletin 30

STEPHEN'S-ADAMSON
MFG. CO.

Car Pullers
Car Loaders
Winches

SealMaster
Ball Bearings

Speed
Reducers

Conveyor
Elevators
Screens

11 RIDGEWAY AVE., AURORA, ILL.

When inquiring specify CEP5189 — see information request blank, pgs. 2-3

**FOR FASTER
BETTER
PROCESSING**



Modern

**INTERNATIONAL
PEBBLE & BALL MILLS**

If you Grind, Mix or Process Chemicals, Ceramics, Food Products, Drugs, Inks, Paints or Minerals, investigate what INTERNATIONAL has to offer in Equipment for INCREASED PRODUCTION and LOWER COSTS — Write or Wire for Catalog and complete information today.

INTERNATIONAL ENGINEERING, INC.
DAYTON, OHIO

When inquiring specify CEP5190 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

PRODUCTION

Gear Coupling Has Latitude for Total Misalignment of 6°

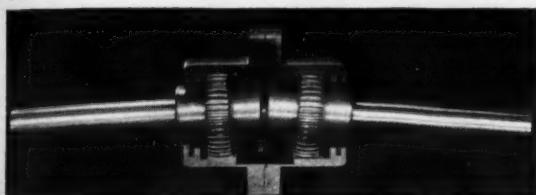
Adaptable to severe operations, permitting combinations usually impractical

Uses — Coupling for driving and driven shafts in general machine operation. Misaligning latitude makes this coupling especially useful and efficient in many difficult mechanical situations permitting combinations usually impractical.

Features — Permits misalignment up to 3 degrees on either shaft or a total of 6 degrees.

Operation — This coupling for driving and driven shafts comprises a cylindrical housing shell cut with interval gears having stub teeth with 20 degree pressure angle. Driving and driven shafts are respectively connected to hubs of generated gears, each cut on a true central segment of a sphere, the surface of teeth being of constant width throughout their length. The teeth of each spherical gear meshing in the stub teeth of the housing produces a smooth ball action contributing to the reduction of friction and pressure on shaft bearings if the shafts are out of alignment. The specially designed spherical gear is in full mesh on pitch line with internal gear at all times and with maximum reduction of back lash.

Description — Housing shell is of cylindrical floating design cut with internal gears at each end and incloses generated spherical gears connected to hubs. Oil seal is of



GEAR COUPLING . . . compensates for misalignment up to three degrees on either shaft

flexible composition material. Bolt holes in flanges are counter-bored for safety to prevent bolt heads and nuts from extending beyond flange surface. Gasket between flanges insures oil tight seal. Oil hole has safety set screw. At present available in four sizes, with maximum bores of $1\frac{1}{2}$, $1\frac{3}{4}$, $2\frac{1}{4}$ and 3 inches. Capacity HP per 100 RPM ranges from 18.3 to 128.1. Complete ratings given in descriptive folder.

BARCUS ENGINEERING CO., Dept. CEP, 3931 Falls Rd., Baltimore, Md.

When inquiring specify CEP5191 — see information request blank, pgs. 2-3

Feeder Control Boosts Pulverizer Output 35%

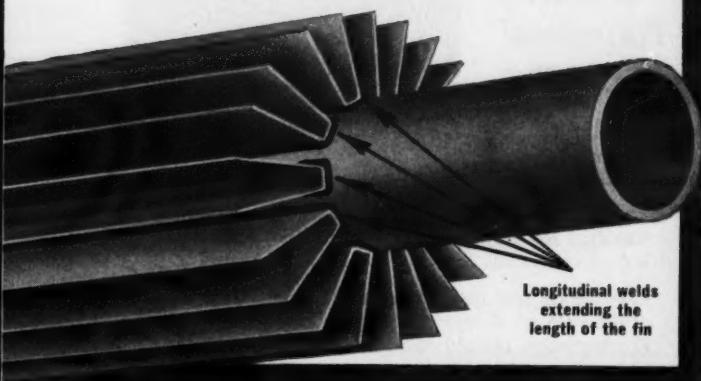
Electronic control which automatically regulates mechanical feeders on pulverizing machines in accordance with the material and prevailing conditions is described in recently issued bulletin. The control is said to have increased capacities as much as 35%. It also warns of overloading, underloading, failure of grinder to discharge and other operating hazards. Bulletin "Automatic Control for Mechanical Feeders on Pulverizing Machines," available upon request.

MAX MOSHER, Dept. CEP, 130 West 42nd St., New York, N. Y.

When inquiring specify CEP5192 — see information request blank, pgs. 2-3

Brown Fintubes

with this integral welded, bonded construction



can help solve your heat transfer tubing problems!

• Because the strip steel fins are resistance welded and integrally bonded onto the center tube or pipe, Brown Fintubes permit heat to flow easily from the center member to the fin without having to pass from one piece of metal to another through an air gap, as when a mechanical bond is used—and avoids the presence of cracks or joints to open up at elevated temperatures to collect rust and other insulating materials,—thereby assuring users of highly efficient transfer of heat and trouble-free operation.

By selecting Brown Fintubes having the proper number and depth of fins, the primary and secondary heat transfer surfaces can be proportioned to the heat transfer co-efficients of the materials being handled. This avoids the use of hundreds, sometimes thousands of feet of bare tubing to satisfy the heat transfer surface requirement of the commodity having the lower heat transfer co-efficient. Consequently a fewer number, or shorter Brown Fintubes are required for a given heat transfer service than if plain bare tubes

were used, resulting in less pressure drop, less weight, smaller shells, much increased heat transfer capacity and—especially important these days—substantial savings in war-scarce tubing.

Brown Fintubes can be obtained in original heat exchanging equipment from most heat exchanger manufacturers,—or substituted in existing shells for bare tubing by making a few simple changes in tube sheets, etc. Recommendations based on your particular flow, pressure, commodity and other conditions—or a descriptive folder—furnished gladly . . . Investigate Brown Fintubes today!

WIDE RANGE OF SIZES

Brown Fintubes are available with any commercial size low carbon steel center tube from $\frac{5}{8}$ " to 7" O.D. with from $\frac{5}{8}$ " to $1\frac{1}{2}$ " low carbon steel fins or 4-6 chrome steel fins; . . . and 18-8 chrome nickel steel center tubes with 4-6 chrome, or 18-8 stainless steel fins. Tubes can be lined with copper, zinc, lead or aluminum if desired when corrosive or other special commodities are to be handled within the tube.

THE BROWN FINTUBE CO.

119 FILBERT STREET . . . ELYRIA, OHIO

When inquiring specify CEP5193 . . . see information request blank, pgs. 2-3

Uniform Treatment plus Instant Chemical Adjustment

THE NEW
GRAVER
Chemical
Proportioner
reduces costs—
provides more ac-
curate treatment
of water.



The new Graver Chemical Proportioner sets a new standard for accuracy and uniformity in the feeding of chemicals for the treatment of water.

Positive control insures this uniformity regardless of the volume of water entering the treating plant. Furthermore, should the water require a change of treatment, this equipment permits instant increase or reduction of the chemical charge over a wide range, without taking the feeder out of operation.

And that isn't all. Note carefully these other important advantages:

- Accuracy to within 2% at all flow rates.
- May be operated from contactor on any standard meter or flow measuring device.
- Chemical feeder and proportioner may be located any distance from meter or control.
- Readily adapted to any make of solution type chemical feeder where swing pipe or skimmer can be installed.

The Graver Chemical Proportioner is the newest development for the accurate feeding of chemicals for water treatment and is the result of more than thirty years experience in the design and manufacture of water conditioning equipment of all types. Let us tell you more about it.

Write today for bulletin 310

GRAVER



When inquiring specify CEP5194 — see information request blank, pgs. 2-3

INSTRUMENTS OF CONTROL

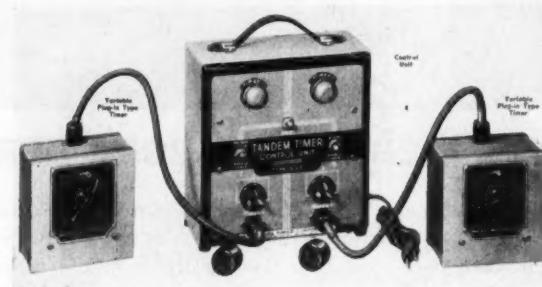
Device Maintains Practically Any Timing Sequence

Sets for continuous or single operation by convenient switch

Uses — This timing device presents versatile qualities that make it of great practical value in production departments, laboratories and in testing electrical apparatus.

Features — Permits practically any timing sequence that may be desired. Plugging in different timing elements is accomplished in a manner of seconds.

Operation — Typical application: in using a set-up for a double solenoid where one solenoid is to actuate for 4 seconds and the other solenoid for 2½ seconds in sequence on a life test, the following units are used: A CU-2 control unit connected to two TE-14S timing elements. (The particular elements specified in this instance having a range of ½ to 14 seconds.) One solenoid is connected to the load contacts on timing element No. 1 and the other solenoid is connected to the load contacts on timing element No. 2. With these connections the first solenoid would be actuated 4 seconds and released when timing element No. 2 started on the 2½ second



TANDEM TIMER . . comprising control unit and timing elements which control the load relays

period. This cycle will keep repeating until shut off. In addition, the CU-2 control unit can be set for single operation, by merely placing the single cycle push-button with the toggle switch at single cycle position.

Description — Referred to as the "Tandem Timer," this device is essentially a control unit employing two individual and variable plug-in timing elements. With the timing elements adjusted to their correct respective time intervals, each cycle of operation will follow the other continuously in regular sequence. Further adjustments are unnecessary until a new sequence is required. Automatic reset features make a continuous as well as a single cycle of operation possible. Plugging in of different timing elements is accomplished in a manner of seconds. The control unit cabinet measures 8½" x 8½" x 5" and contains the "ON and OFF" toggle switch, single cycle start push button switch, pilot lamps, receptacles and sockets into which are plugged the two timing elements which control the single pole double throw load relays. The contact circuits of the load relays are unpowered so that they may be powered with the particular voltage and current necessary for test or production requirement. The load relay contacts are rated at 110 volts, 10 amperes, A. C. The timing elements are synchronous motor driven, automatic resetting timers, of sturdy design and construction

contained in a formed steel box which measures 5" x 5" x 3". A graduated dial and pointer knob allows a quick and accurate selection of the timing period. Timing elements are available in six standard models. Their combined total setting range is from ¼ second to 2 hours, forty-five minutes. Timing elements for longer intervals built to specification.

INDUSTRIAL TIMER CORP., Dept. CEP, 113 Edison Place, Newark, N. J.

When inquiring specify CEP5195 — see information request blank, pgs. 2-3

Electronic Photometer Measures Extremely Low Light Values

Variety of spectral response provided by choice of three phototubes



PHOTOMETER . . comprising portable case and search unit

Uses — For measurement of low light values of extremely weak light or thin light beams. For measuring fluorescence, luminescence, infra-red and ultra-violet radiation and other low light values. For application in many instances where light is too low to be measured on the usual type of photometer.

Features — Gives immediate readings. Variety of spectral response provided by choice of three photo tubes for applications involving light at both ends of the visual range and outside the visual range.

Description — Instrument comprises photo tube in search unit with flexible cable and indicating instrument built into a portable case. Instrument is operated from power line without batteries. High gain DC amplifier is the most essential part of the photometer. Its input is the weak direct current signal obtained from the phototube as the result of light impinging upon the cathodes of the photo tube. Constant voltage transformer provides first rough stabilization, actual being achieved by specially developed compensating bias circuit. Light intake opening of search unit has 1 in. diameter. Threaded ring holds filter in front of phototube window. Turntable disc for fastening to search unit has five openings ranging from 1 in. to 1/16 in. diameter for different sensitivity ranges. Iris diaphragm can be mounted in front of window for stepless control of area and sensitivity and it can extend the measuring range of the photometer approximately 200 foot candles. Tapered extension pieces are conveniently used in scanning images on a ground glass, smaller than the window of the search unit. Glass and gelatin filters are

PRODUCTION . . . FOR LABORATORY

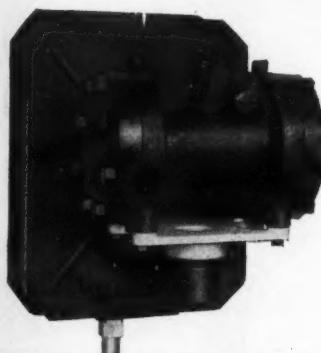
obtainable to suppress the sensitivity of the phototubes in certain parts of the spectrum. Panel of the instrument carry on and off switch, zero adjustment knob for the amplifier, a stepless sensitivity control and a range switch. The stepless sensitivity control makes it possible to set the instrument to give an indication of 100 (or any other indication) for the standard in terms of which the light reading is to be taken. The range switch permits reducing the sensitivity of the instrument in the ratio of 10:1. The zero control can be used for measurements with suppressed zero. Photometer is equipped with a microammeter and D type tube (covering the whole visual range and extending into infra-red and ultra-violet) and when exposed to 2865 K incandescent light shows full scale deflection at 0.025 ft. candles if operated at full sensitivity, each division on the scale thus representing 0.00025 foot candle. When equipped with taut suspension, pointer type galvanometer sensitivity is 5 times as high and under the same conditions full scale deflection is shown at 0.005 foot candles.

PHOTOVOLT CORP., Dept. CEP, 95 Madison Ave., New York, N. Y.

When inquiring specify CEP5196 — see information request blank, pgs. 2-3

New Flow & Level Manometer Uses No Mercury or Other Liquid

Torque tube assembly replaces stuffing box, product contamination avoided



MANOMETER . . . design eliminates friction and lubrication

provides a completely closed system and is designed to eliminate friction and lubrication. Lost motion and wear are further reduced by absence of internal pivots and springs. Metal bellows respond to pressure variations and insure faster response under ordinary circumstances with immediate reaction to sudden changes in flow. The sturdy bellows are built to withstand high over-range without damage. Under steady flow conditions accuracy is within 1% of range scale. Supplied for standard ranges between 20 and 500 inches of water. Range can be changed right on the job by substituting pre-calibrated torque tubes. This instrument is called the "Taylor Aneroid Manometer."

TAYLOR INSTRUMENT COMPANIES, Dept. CEP, Rochester, N. Y.

When inquiring specify CEP5197 — see information request blank, pgs. 2-3

Megohm-Bridge for Fast, Accurate Wood Moisture Determination

Supplies direct readings in moisture-content percentage terms

Uses — For speedy and accurate determination of moisture content in wood, by the dependable electrical resistance method.

Features — Bridge circuit is self-compensating. No variables to contend with or compensate for, such as voltage fluctuations or varying tube characteristics. Direct readings in moisture content percentage terms. Moderate in cost. **Description** — Instrument is a modified Wheatstone Bridge using a cathode-ray (magic eye) electronic tube as the null or balance indicator. The combination switch and control knob is rotated until the null indicator flashes, at which point moisture content is read directly on the dial. Standard pin type electrode furnished with the instrument will not permanently mar the surface of the material under test. It is readily driven into or extracted from the lumber or wood by the hammer-extractor furnished. Two models available. MB — LA calibrated 7 to 25% moisture in wood, operating on 105-130 V. 50-60 cycle A.C. supply. Portable Megohm-Bridge MD — 1 calibrated 8 to 24% with self contained dry battery with estimated life of 6 months to one year depending on use.

INDUSTRIAL INSTRUMENTS, INC., Dept. CEP, 156 Culver Ave., Jersey City, N. J.

When inquiring specify CEP5198 — see information request blank, pgs. 2-3

CONSTANT TEMPERATURE ±0.02 F From 0 to 210 F For Kinematic Viscosity Measurements

Uses — As a flow and liquid level manometer. Available for all types of indicating and recording meters and controllers. **Features** — Absence of mercury removes possibility of product contamination and the hazard of mercury being blown due to line surges. **Description** — Stuffing box is replaced by a new torque tube assembly which

provides a completely closed system and is designed to eliminate friction and lubrication. Lost motion and wear are further reduced by absence of internal pivots and springs. Metal bellows respond to pressure variations and insure faster response under ordinary circumstances with immediate reaction to sudden changes in flow. The sturdy bellows are built to withstand high over-range without damage. Under steady flow conditions accuracy is within 1% of range scale. Supplied for standard ranges between 20 and 500 inches of water. Range can be changed right on the job by substituting pre-calibrated torque tubes. This instrument is called the "Taylor Aneroid Manometer."

S-83255 SARGENT HIGH PRECISION CONSTANT TEMPERATURE VISCOSITY BATH ±0.02 F, PATENT No. 2,037,993. For operation from 115 volt A.C. 60 cycle single phase circuits.....\$175.00



E. H. SARGENT & COMPANY, 155-165 East Superior Street, Chicago, Illinois
Michigan Division: 1959 East Jefferson, Detroit, Michigan

S A R G E N T
SCIENTIFIC LABORATORY SUPPLIES

When inquiring specify CEP5200 . . . see information request blank, pgs. 2-3



Send for your free copy of this new Supplement No. 1 (to "Pyrex" Laboratory Glassware Catalog LP21). Its 16 pages present complete information on the newest lines and the latest improvements and developments in "Pyrex" and "Corning" laboratory glassware—which are available now through your regular laboratory supply dealer.

"PYREX" and "VYCOR" are registered trade-marks and indicate manufacture by

CORNING GLASS WORKS • CORNING, N. Y.

When inquiring specify CEP5199 — see information request blank, pgs. 2-3

MORE
Precision Timing Tests
EVERY LAB HOUR



with Automatic Standard Electric STOP CLOCKS

The last word in simplified precision timing, now serving scores of laboratories and testing departments. Dial is large and easy to read. Automatic control eliminates manual error. "Shelf-size" makes the stop clock subject to less mislaying. Several models, including types for measurement of intervals from .01 second to one hour. Rugged, trouble-proof construction. Details on request.

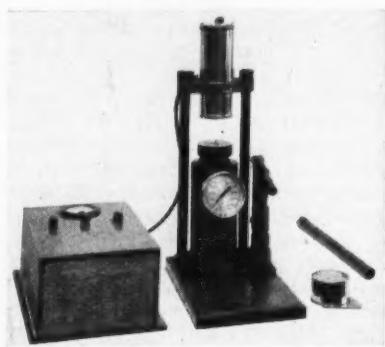
THE STANDARD ELECTRIC TIME COMPANY
69 Logan St., Springfield, Mass. Branch Offices in Principal Cities
"STANDARD MAKES EVERY SPLIT-SECOND COUNT"

When inquiring specify CEP5201 — see information request blank, pgs. 2-3

INSTRUMENTS OF CONTROL

New Tester for Moisture Content of Granular, Dehydrated Products

Very low contents measured quickly and accurately, used in testing basic dehydrated vegetables



MOISTURE REGISTER . . . tests dehydrated foods . . . granular materials

and simply made in 2 to 3 minutes per sample. Very low moisture content measurements made with great accuracy.

Operation — A small amount of the material to be tested (Usually from 100 to 200 grams) is placed in the material cup which is placed in position in the instrument. By means of an operating lever, the material is subjected to a pressure of a certain specified amount for the purpose of eliminating entrained air in the sample. When predetermined pressure is reached, as indicated on the pressure gauge, the reading on the dial of the separate meter unit is recorded. The principle of measurement is the employment of a high frequency electrical field set up in front of the electrode which field penetrates the electrode and becomes the function of the moisture content. The result indicated on the meter dial is translated into percentage of moisture content by references to calibration graphs or tables.

Description — Complete equipment consists of instrument with pressure gauge and measuring cup and separately housed meter unit. Total weight, 65 pounds. Space occupied approximately 15" x 20" x 17". Operated by batteries which normally provide service for many months.

MOISTURE REGISTER CO., Dept. CEP, 5117 Kinzie St., Los Angeles, Calif.

When inquiring specify CEP5202 — see information request blank, pgs. 2-3

Speed Recorders for Rotary Equipment

New 12-page-catalog describes round chart and strip chart recorders which measure and automatically record the speed of rotating machinery with high accuracy and reliability, making possible close speed regulation. Both round chart and strip chart types are illustrated as well as the tachometers employed. Diagrams giving mounting dimensions and various essential specifications are included. Catalog N-27 is available upon request.

LEEDS & NORTHRUP CO., Dept. CEP, 4934 Stenton Ave., Philadelphia, Pa.

When inquiring specify CEP5203 — see information request blank, pgs. 2-3

Illuminated Magnifying Units In Both Fluorescent and Vapor-proof Style

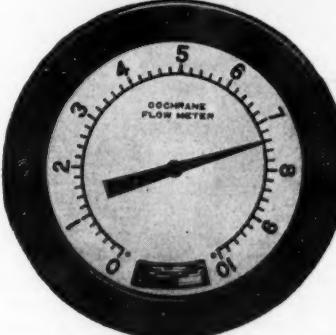
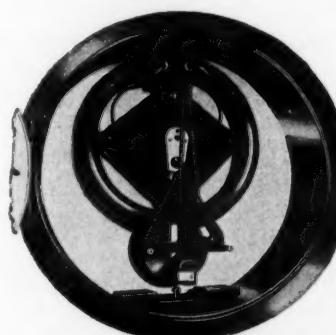
Four-page-folder, 8½ x 11 ins. contains numerous large action photos illustrating practical applications of magnifying to various types of fine bench and assembly work, precision machining, surface grinding. Also setting of verniers, height gauges, micrometers and other finely graduated tools. Manner in which these units incorporated light source and properly directed light with magnification is concisely explained. Bulletin entitled SuperSight available upon request.

BOYER-CAMPBELL CO., Dept. CEP, 6540 Antoine St., Detroit, Mich.

When inquiring specify CEP5204 — see information request blank, pgs. 2-3

Ultra High Pressure Flow Meter Has Mercury Sealed Manometer

Adaptation of tilting U-tube very efficient at pressures over 5000 lbs. per sq. in.



HIGH PRESSURE FLOW METER . . . handles pressures over 5,000 lbs. per sq. in.

join the free (inboard) ends of the twin six inch nickel torsion tubes. The outboard ends of the torsion tubes are anchored and to these the pressure lines from the primary elements are connected. By this design the ring tilts 10 degrees for the full differential range measurement which may be between four and nine inches of mercury depending on the cam weight supplied. The cam extracts the square root relationship so as to express the flow directly in uniform increments on the 36 in. indicating scale which

INSTRUMENTS

may be between four and nine inches of mercury depending on the cam weight supplied. The cam extracts the square root relationship so as to express the flow directly in uniform increments on the 36 in. indicating scale which may also be combined with an integrator and/or 12 in. recording chart feature. Rugged construction combines such desirable details as ball bearing cam strap sheave, integral plumb bob and alignment scale, lens type metal gaskets, mid-scale calibrating pin. These meters are tested under 7,500 lbs. per sq. in. and are in successful use in measurement of nitrogen, hydrogen and ammonia gases at pressures above 5,000 lbs. per sq. in.

COCHRANE CORP., Dept. CEP, 17th & Allegheny, Philadelphia, Pa.

When inquiring specify CEP5205 — see information request blank, pgs. 2-3

Voltage Breakdown Tester Has Simplified Design

Sturdy construction, convenient control panel, self-incorporated safety switch

Uses — To provide a simple, safe, positive and quick means of testing voltage breakdown of materials or components.

Operation — The high voltage is applied by means of a suitable fixture or again by a test probe connecting with proper receptacle on the instrument panel, as well as by a second



VOLTAGE BREAKDOWN TESTER . . . quick and positive operation

connection to the ground binding post on the panel. Instrument connects with the usual 110 volt 60 cycle A. C. A ground clip goes on nearest grounded conduit or water pipe. Power switch turns instrument on or off. To set the instrument for test, the variac is rotated counter-clockwise until desired voltage is indicated on the meter. When material or component is tested a warning light on the panel flashes on to indicate breakdown. A second light indicates that the instrument is "alive."

Description — Housed in neat, sturdy metal cabinet with sloping panel, the instrument consists essentially of a step-up transformer accurately controlled by a variac; current limiting resistors safeguarding the equipment in the event of a dead short; a relay, indicating by means of a panel light when there is a breakdown, a meter providing direct reading voltages and the rectifier and filter circuits providing the high voltage D. C. A self-incorporated safety switch makes the power supply inoperative if chassis is removed from case or otherwise disturbed. Two models: Type P-1, O-4000 v. D.C. Type P-3, O-10,000 v. D.C. Both continuously variable over entire range.

INDUSTRIAL INSTRUMENTS INC., Dept. CEP, 156 Culver Ave., Jersey City, N. J.

When inquiring specify CEP5206 — see information request blank, pgs. 2-3

**YOUR PRODUCTION
DRIVE STARTS WITH
YOUR EQUIPMENT**

Increase Yield BY STOPPING ACID CORROSION with Pfaudler Glass-Lined Steel Equipment

If acid corrosion is your problem, here are ten important facts about Pfaudler Glass-Lined Steel that are vital to its solution. These properties have made it possible to produce important war products that otherwise would not exist or would be vastly inferior in quality.

1. Pfaudler glass enamel is resistant to all acids, except hydrofluoric. It stands up where many "tough" alloys have failed. It prevents undesired catalysis, remains inert to acid solutions.
2. It withstands temperatures up to 600°F, is resistant to thermal shock.
3. The bond or adhesion of Pfaudler glass enamel to its metal base is approximately 3000 pounds per square inch minimum.
4. Internal and jacket pressures of Pfaudler glass-lined units pressures of upped continuously. Internal pressures of 300 pounds per square inch are possible. Laboratory autoclaves have

been built for 1000 pounds internal pressure.

5. Standardized reaction kettles for both high and low pressure work are available in a wide range of capacities.
6. Special shapes and designs to meet new operating conditions to meet more diversified. Some examples are shown herewith.
7. With Pfaudler acid resisting glass-lined pipe, fittings, and valves, you can process in the complete absence of metal.
8. The smooth seamless surface of Pfaudler glass enamels minimizes adhesion.
9. In certain processes, the substitution of Pfaudler glass-lined steel has served many critical materials of construction for the war effort.
10. Pfaudler engineering has solved many a tough processing equipment problem. Is yours next?

The Pfaudler Co., Rochester, N. Y. Branch Offices: 330 West 42nd Street, New York City; 1442 Conway Bldg., Chicago, Ill.; 1225 Howard St., San Francisco, Calif.; 455 Paul Brown Bldg., St. Louis, Mo.; 731 Little Bldg., Boston, Mass.; 7310 Woodward Ave., Detroit, Mich.; 1318 1st National Bank Bldg., Cincinnati, Ohio; 1228 Commercial Trs. Bldg., Philadelphia, Pa.

HIGH PRESSURE REACTORS

LARGE ONE-PIECE STORAGE TANK

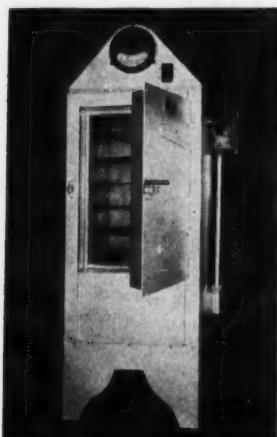
PFAUDLER GLASS-LINED EQUIPMENT

When inquiring specify CEP5207 . . . see information request blank, pgs. 2-3

KIRK & BLUM LABORATORY OVENS

For the research laboratory you'll find KIRK & BLUM small ovens accurate and reliable in making tests for various scientific purposes.

These ovens may be heated with gas or electricity (direct or indirect) and can be equipped with indicating or recording temperature control and automatic timing devices. Various sizes and types can be supplied to meet the individual need.



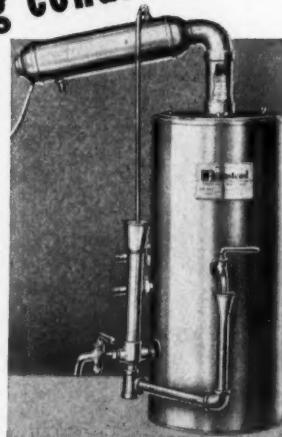
KIRK & BLUM Engineers can design ovens to meet your special requirements. Write today for details of K & B Engineering Service.

THE KIRK & BLUM
MANUFACTURING CO.

2833 Spring Grove Ave.
Cincinnati, Ohio

When inquiring specify CEP5208 — see information request blank, pgs. 2-3

How to keep your
BARNSTEAD Water Still in
good operating condition



It's a very simple matter to keep your Barnstead Water Still in good operating condition. First of all, keep its interior clean. This prevents scale formation from cutting down the still's efficiency. Second, use reasonable care in operating your still. If it is a gas or electrically operated still, make sure there is enough water in the evaporator before starting. This will prevent burnouts of heating elements. Also be sure ample water flows to the equipment while it is in operation.

Barnstead Water Stills are built for long, continuous service. There are Barnsteads, fifteen years in operation, that still produce the highest grade of distillate. You can get similar results with the right amount of care.

Barnstead
STILL & STERILIZER CO. INC.

66 LANESVILLE TERRACE, FOREST HILLS, BOSTON, MASSACHUSETTS

When inquiring specify CEP5209 — see information request blank, pgs. 2-3

INSTRUMENTS

Fluorophotometer Employs Novel Slide Carriage

Accelerates control work in the determination of vitamins and minerals



FLUOROPHOTOMETER
complete self contained unit

Uses: Universal application in fields of fluorometry, colorimetry and turbidimetry using wave lengths of narrow bands over the entire range of the spectrum from 3,000 to 8,000 Å. Designed to accelerate routine control work in determination of vitamins and minerals.

Features: Novel slide carriage accommodating both the blank and sample to be tested. Automatic shutter shields sample from the light beam and cuts in the measuring circuit.

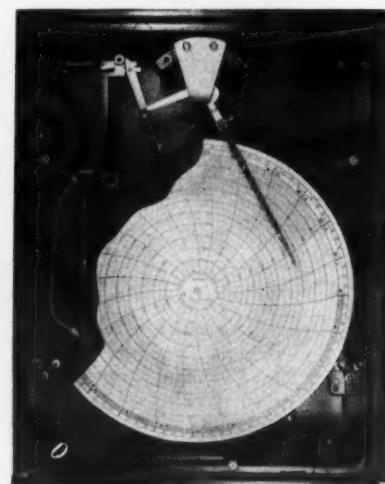
Description: Complete, self-contained unit, incorporating a simple electric circuit, eliminating the use of amplifier and stabilizer. May be used either with absorption cuvettes or test tubes.

PFALTZ & BAUER, INC., Dept. CEP, Empire State Bldg., New York, N. Y.

When inquiring specify CEP5210 — see information request blank, pgs. 2-3

Absolute Pressure Gauge Has Greater Sensitivity

Designed to measure accurately and control pressures below standard atmospheric pressures



ABSOLUTE PRESSURE GAUGE ASSURES
UNIFORMITY

ard atmospheric pressure.

Features — Opposing bellows design gives unusual flex-

Uses — For applications requiring accurate measurement and control of absolute pressures to insure uniformity of product or to maintain the highest yield of a desired constituent. For cases where pressures are low enough to be seriously affected by barometric pressure variation, — pressures below stand-

BREAKING LIQUID HANDLING Bottlenecks is a BOWSER SPECIALTY!

Equipment FOR
FILTERING
METERING
PUMPING
PROPORTIONING
DISPENSING LIQUIDS
CAN AND BARREL
METER SYSTEMS
LUBRICATING FILTERS
LUBRICATORS
OILERS

Consult Bowser! Many industries, faced with a liquid handling problem have found that it pays to get the advice of trained engineers. Whether you have a problem of getting faster or more accurate measurement of liquids used in processing; or one of securing faster or better filtration; whether it be a means of keeping cutting, broaching, grinding or other oils clean; a method of lubricating engines, machines or turbines; an automatic metering system for blending liquids; a meter type can or barrel filling system; a method for storing or dispensing paint oils, lube oils, etc., Bowser can help you. To get started right . . . write Bowser today!

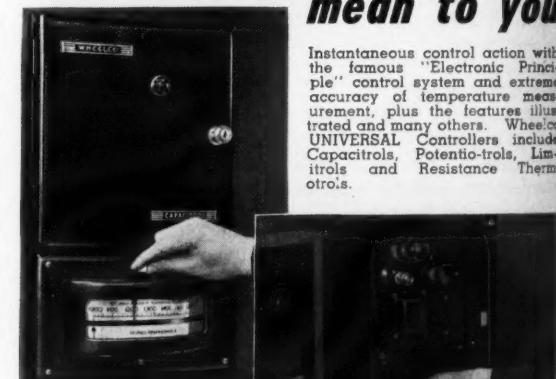
S. F. BOWSER & COMPANY, INC.
Fort Wayne Indiana

BOWSER
LIQUID CONTROL SPECIALISTS SINCE 1885

METERING • DISPENSING • STORING • LUBRICATING • FILTERING • DISTILLING

When inquiring specify CEP5211 — see information request blank, pgs. 2-3

Here's what UNIVERSAL TEMPERATURE CONTROLLERS mean to you



Temperature Control Adjustment easily made from front of Controller. Control Setting may be locked inside case if desired.

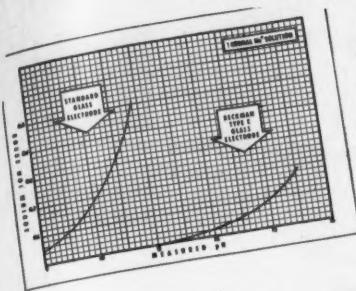
Interchangeable Measuring Sections permit choice of scale range or type of temperature measuring system (Potentiometer, millivolt Meter or Resistant Thermometer).

For full details, write for free Bulletin Z6000

Wheelco Instruments Co.
841 W. HARRISON STREET • • • CHICAGO, ILLINOIS

When inquiring specify CEP5212 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW



ONLY *Beckman* HAS
THIS IMPORTANT pH ADVANCEMENT!

There are many applications where pH control must be maintained on highly alkaline solutions where sodium ions are present. Conventional glass electrodes under these conditions are virtually useless (see chart). But an exclusive Beckman development — Beckman "Type E" Glass Electrodes — permits accurate, reliable pH measurements in highly alkaline solutions, even in the presence of sodium ions. This great advancement makes the savings of modern pH control possible in entirely new fields where pH control was formerly impractical, such as soap making, manufacture of bleaches, detergents, etc.

This is only ONE of the many important advancements you get in Beckman pH Equipment. When you buy pH instruments, BUY THE BEST — BUY BECKMAN!

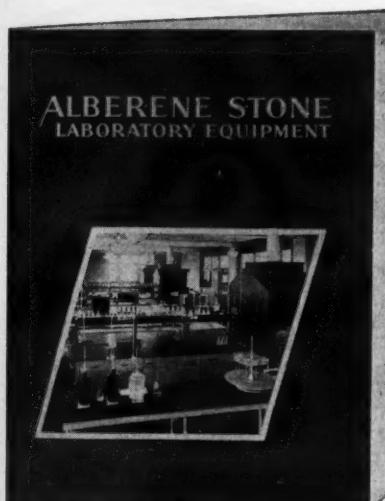
There is a size and type Beckman instrument for EVERY application . . . for EVERY size plant. Write for descriptive literature!

World's largest manufacturer of Glass Electrode pH Equipment!

NATIONAL TECHNICAL LABORATORIES
SOUTH PASADENA, CALIFORNIA

Beckman THE LEADING NAME IN pH

When inquiring specify CEP5213 — see information request blank, pgs. 2-3



SALT SPRAY UNITS
Efficiency and durability of Alberene Boxes are widely recognized. We furnish fully-equipped units; to Navy or your own specifications. Prompt delivery.

ALBERENE STONE CORP. OF VIRGINIA
419 4th Avenue, New York

When inquiring specify CEP5214 — see information request blank, pgs. 2-3

INSTRUMENTS

ability. Thus, the element response is determined principally by the calibrating spring rather than the bellows characteristic. Gauge has high accuracy of calibration and long life.

Description — Element of this pressure gauge is spring and bellows assembly located in upper lefthand corner of the case. Assembly consists of an upper evacuated bellows (sealed at nearly perfect vacuum) containing the calibrating spring and a lower actuating bellows to which a connection to the measured pressure is made. The top of the evacuated bellows and the bottom of the actuating bellows are rigidly fixed to supporting castings, while adjacent ends of each bellows are attached to a movable plate which transmits movement of the bellows to the recording pen. The bellows are carefully matched for effective area and movement under vacuum. All calibrating springs are inspected for proper construction and linear movement. They are located in evacuated bellows — sealed from attack by corrosive external atmosphere and the measured fluid. Non-acid soldering flux is used for all soldering operations to eliminate any possibility of a corrosive flux harmful to the bellows. After evacuation of the top of the bellows and completion of the necessary adjustments, the instrument is aged for 48 hours under vacuum and its calibration checked. At present the gauge is available only as a single record recorder or single record air-operated controller. Available with ranges of 100, 200, 300, 400, 500 of mercury absolute and 15 lb. sq. absolute.

BROWN INSTRUMENT CO., Dept. CEP, Wayne & Roberts Aves., Philadelphia, Pa.

When inquiring specify CEP5215 — see information request blank, pgs. 2-3

High Accuracy Flow Meters Employ Balance Method and Integrate Directly

Construction and operating principles of flow measuring devices are described in a twenty-page-and-cover catalog. Manner in which the balance method employed "weighs" flow on a beam by balancing differential pressure, representing flow with the centrifugal force of a flyball system is explained. The advantages which these meters offer in integrating directly is also discussed. Full page, detailed, photos of the equipment are of great interest and assistance in checking with text. Specifications and performance data are conveniently tabulated. Catalog No. N-28-160 is available upon request.

LEEDS & NORTHRUP CO., 4934 Stenton Ave., Philadelphia, Pa.

When inquiring specify CEP5216 — see information request blank, pgs. 2-3

Ignition Rectifiers for Power Conversion In the Electrochemical Industries

Four-page-booklet briefly describes application of ignition rectifiers for service in the electrochemical industry. The manner in which rectifiers provide quiet, dependable, efficient method of power conversion is explained as well as their superiority to other types. Advantages are dealt with in detail such as the data pointing out the elimination of rotating parts requiring maintenance and replacement. All the features of interest in connection with its electrochemical uses are described in Booklet B-3130 which will be sent on request.

WESTINGHOUSE ELECTRIC & MFG. CO., Dept. CEP, East Pittsburgh, Pa.

When inquiring specify CEP5217 — see information request blank, pgs. 2-3



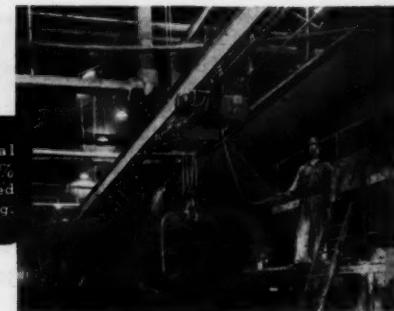
AMERICAN MONORAIL

equipment will accelerate your production by releasing skilled help from handling labor, reducing fatigue and thereby making possible a greater output per man. Couple this to reduction in idle machine time, more compact arrangement of machinery and equipment, less floor space for storage, and you know why American MonoRail Equipment Keeps Production Rolling.

American MonoRail Equipment is engineered to meet the particular requirements of each problem. There is no delay or shutdown during installation. Without obligation, let an American MonoRail Engineer show you how it can be done in your plant.



WHITE FOR Blue Book
Illustrating hundreds of
MonoRail installations.



Sludge removal
costs reduced 75%
by power operated
overhead handling.



Careful handling
of chlorine drums
by means of Mono-
Rail equipment.

THE AMERICAN MONORAIL CO.
13109 ATHENS AVENUE,
CLEVELAND, OHIO

When inquiring specify CEP5218 — see information request blank, pgs. 2-3

CONNELLY MANOMETERS

*Unbreakable
Easily cleaned*

Connelly Heavy Duty Manometers are made with unbreakable plastic tubes. Drop them on the floor — toss them in with your tools — treat 'em rough — they won't break. They're easily cleaned, too. Just unscrew valve and insert brush.

Inexpensive — yet precision made to highest standards. Available in a wide range of styles and sizes. Needle valves may be closed to retain fluid for portable use. Easy reading etched metal scale is zero adjustable.

Write for Bulletin

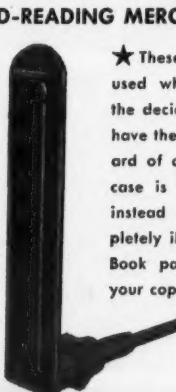
CONNELLY IRON SPONGE &
GOVERNOR CO.
CHICAGO, ILL. — ELIZABETH, N.J.

When inquiring specify CEP5219 — see information request blank, pgs. 2-3

OPEN V-CASE INDUSTRIAL THERMOMETERS

HIGHLY ACCURATE RED-READING MERCURY

★ These units are widely used whenever price is the deciding factor. They have the same H-B standard of accuracy, but the case is made from iron instead of brass. Completely illustrated in Blue Book part 3. Write for your copy today.



Available in three types of connections:
Fixed Thread, Union Hub or Separable socket.

H-B INSTRUMENT CO., INC.

PRECISION SCIENTIFIC  INDUSTRIAL INSTRUMENTS
2510 NO. BROAD STREET, PHILADELPHIA, PA.

When inquiring specify CEP5220 — see information request blank, pgs. 2-3

INSTRUMENTS

Device Re-establishes Process Stabilization in 1/4 Usual Time

For application where process lag is considerable; no tuning in, only two process adjustments



CONTROLLER . . . re-establishes stabilization more quickly

duced under the name of "Hyper-Reset" is not an instrument or mechanism but a control function, available in a newly designed controller. The control function performed reduces the effects of a process disturbance by making initial temporary corrections, which are proportional to the rates of change of the measured value caused by the disturbance. The normal re-set follows, establishing stabilization. But the several control functions carried out by "Hyper-Reset" are simultaneously and automatically adjusted. No tuning in is necessary. No more than two process adjustments are required, proportional and "Hyper-Reset." Bulletin No. A-330, explaining theory and performance and giving specifications of this controller — "Stabilog" — model 30 available on request.

FOXBORO CO., Dept. CEP, Foxboro, Mass.

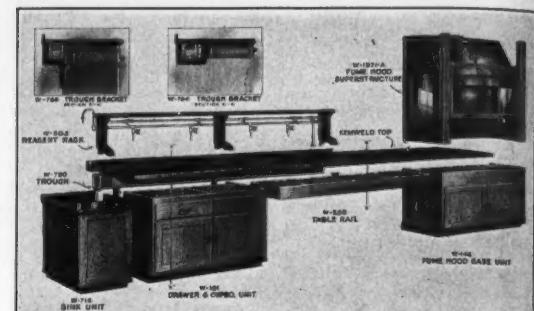
When inquiring specify CEP5221 — see information request blank, pgs. 2-3

CO₂ Analyzer & Calculator Units Test Furnace in 40 Seconds

CO₂ and stack temperature readings converted into heat loss and efficiency percentages; for boilers fired by coal and fuel oil

Uses — This calculator has been designed for use with the manufacturer's analyzer which determines CO₂ percentage in the flue gas.

Features — Simplifies determining furnace performance since a complete CO₂ test can be made in 40 seconds with the analyzer and the calculator instantly converts the reading into terms that show the degree of furnace efficiency. Description — Device comprises a portable CO₂ analyzer and a special calculator. When the CO₂ percentage in the flue gas is determined with the analyzer the pointer in the calculator is moved to the corresponding figure on the scale. Then the slide is moved until the figure obtained



Note how Keweenee Standard Units are assembled

EQUIP YOUR LABORATORIES with KEWAUNEE MATCHED UNITS — and SAVE!

Investigate the Keweenee Cut-Cost Method of producing fine quality Laboratory Furniture. See how Keweenee smart designs, using a minimum of critical materials, meet every need and give greater working efficiency and more uniform appearance. Quick Service is possible, due to Keweenee's Unit Construction Method. Wood now available — Steel restricted for the duration.

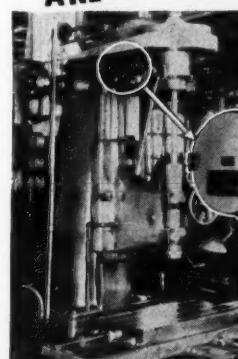
Write for the Keweenee Catalog.



C. G. Campbell, President
5011 S. Center Street, Adrian, Michigan
Eastern Branch: 220 E. 42nd St., New York, N.Y.
Mid-West Office: 1208 Madison St., Evanston, Ill.
Representatives in Principal Cities

When inquiring specify CEP5222 — see information request blank, pgs. 2-3

ARE ANY OF YOUR MACHINES LOAFING?



Time Meters
Will Find Out

A SHOP FOREMAN wanted to buy four new machines to increase production. He put in a G-E time meter to check the actual operating time of the one machine in use. It showed the machine was operating only 13 per cent of each shift. The rest of the time was spent on set-up work. Arrangements were made to keep work ready for the machine. New machines were not needed. G-E time meters are available in a wide variety of types to meet your specific requirements. For more information, ask for "Metered Time," GEA-1574, and Bulletin GEA-3299. General Electric Co., Schenectady, N.Y.

GENERAL ELECTRIC

603-30-6500

When inquiring specify CEP5223 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

INSTRUMENTS



CALCULATOR CONVERTS analyzer readings into heat loss and heating efficiency percentages

by testing stack temperature shows in the upper right hand corner. As a result, the performance of the furnace appears in the slotted arrow. One figure showing percent of heating efficiency and the percent of total heat loss. The calculator instantly converts the reading of the analyzer into terms that show the degree of furnace efficiency. Equipment described is the "Fire Efficient Finder" and "Fyrite CO₂ Orsat Analyzer."

BACHARACH INDUSTRIAL INSTRUMENT CO., Dept. CEP, Pittsburgh, Pa.

When inquiring specify CEP5224 — see information request blank, pgs. 2-3

Portable A.C. & D.C. Instruments

Embody variety of single, multi-ranges providing for measurement of A.C.-D.C. volts, amperes



A. C. — D. C. INSTRUMENT . . . for field and laboratory use

nations of ranges have been carefully chosen to meet every need of test men, laboratory technicians and research engineers. Molded cases are fully insulated and magnetically shielded from stray field influence. Instruments available either with or without covers. Scale length is 3.2 in. A. C. and 2.8 in. D. C. and the units have an accuracy of plus or minus 1% of full scale. Instruments are equipped with a mirrored dial and a knife edge pointer which aids in making close and accurate readings. Model is identified as No. P-14, portable.

WESTINGHOUSE ELECTRIC & MFG. CO., Dept. CEP, East Pittsburgh, Pa.

When inquiring specify CEP5225 — see information request blank, pgs. 2-3

On the War Production Front- Vacuum by ELLIOTT EJECTORS

That big capital "V" symbolizes Victory — it can also in some measure stand for Vacuum, which in various processes is helping to hasten Victory.

Vacuum by Elliott ejectors is drying blood plasma for saving war wounded . . . drying foods to feed the fighting forces . . . helping in the making of gun powder used to drive bullets and shells . . . processing synthetic rubber for a thousand war needs . . . and helping to "keep 'em flying" — and rolling too — in gasoline production. Many of these jobs require the handling of such large volumes of vapor that only the steam jet ejector could possibly do the job.

Elliott ejectors are built in simple single-stage type for moderate vacuum; and in two-stage, three-stage or four-stage units for high vacuum or very low absolute pressures. Arrangement and use of intercondensers are dictated by the individual job.

Have you a vacuum job? Write for our Bulletin G-7, explaining how ejectors work, their application, and data required for an intelligent quotation.

ELLIOTT COMPANY

Heat Transfer Dept. JEANNETTE, PA.



DISTRICT OFFICES IN PRINCIPAL CITIES

G-379



When inquiring specify CEP5226 . . . see information request blank, pgs. 2-3

**SURE SIGN OF
GAUGE ACCURACY**



THE "Recalibrator"

TO make sure that the gauges you do buy are the kind that will stand up under today's heavier responsibilities, look for that small "Recalibrator" screw.

It's a big thing to find—the only completely satisfactory way to keep the gauge accurate. If ever the gauge is knocked out of adjustment—and any gauge can be—a twist of the "Recalibrator" screw corrects the error at its source, restores the gauge to complete accuracy at every point on the dial.

The "Recalibrator" is available on all Marsh Gauges. It is just another example of the advanced design and construction that have made the name Marsh a symbol of gauge accuracy and stamina for more than 75 years.

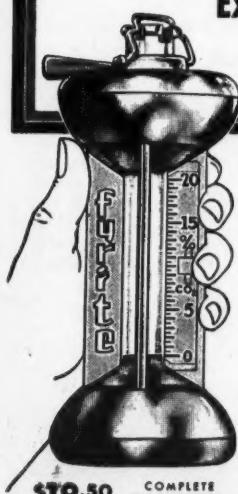
JAS. P. MARSH CORP. 2095 Southport Ave., Chicago, Ill.

MARSH TRAPS
GAUGES
VALVES



When inquiring specify CEP5227 — see information request blank, pgs. 2-3

FUEL is Vital for VICTORY
FYRITE CO₂ Readings
Expose Fuel Waste
INSTANTLY!



The amazingly simplified FYRITE "Orsat" Analyzer makes accurate flue gas tests easy—instantly telling you what percentage of your fuel is being wasted. The FYRITE is conveniently held in the hand while analysis is taken. It is accurate within $\frac{1}{2}$ of 1% CO₂; spill-proof in any position; rugged, durable, compact. More than 7000 in use.

RETURN COUPON BELOW. Obtain literature on Fyrite and learn how to get immediate delivery under priority regulations.

SEND DATA ON FYRITE "ORSAT"

Name		
Address		
City	State	E

\$18.50

COMPLETE
WITH INDUSTRIAL
TYPE FLUE FILTER

BACHARACH
Industrial Instrument Co.
7000 BENNETT ST.
PITTSBURGH, PA.

When inquiring specify CEP5228 — see information request blank, pgs. 2-3

INSTRUMENTS



REFLECTION METER . . line operated

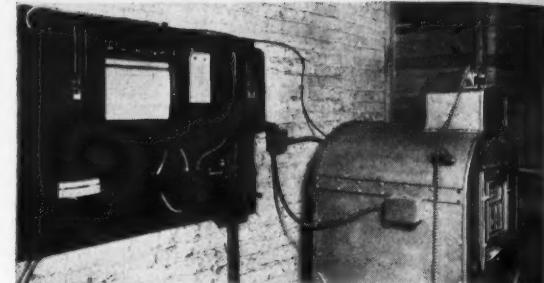
Photoelectric Reflection Meter has Wide Range of Service

Line operated instrument is simple and easy to use on surfaces, pastes, powders, liquids

Uses — Designed for measuring the reflectance and color of solid surfaces, fabric pastes, powders and opaque liquids. Suitable for use on various structures permitting tests for recording deterioration. In standardization for uniformity of shade in manufactured products, fabrics for instance.

Features — Registers dispersed reflection without responding to specular gloss. Operation is simple and convenient and requires no training on the part of the operator.

Description — Model 610 is line operated and provided with a 6v., 15 cp automobile headlight lamp. The light is collimated by a double condensing lens, passes through the filter and strikes the test surface in a parallel beam. The search unit registers dispersed reflection only, inasmuch as specular reflected light returns through the aperture of the photocell. Search unit contains two photocells; the measuring photocell which is mounted so as to register the light reflected from the surface under test, and the compensating photocell which furnishes the current for suppressing the zero reflectance point. A cable with plug-leads from the search unit to a socket on the instrument panel. The instrument housing contains a constant voltage transformer which provides stabilized voltage for the lamp, eliminating the influence of line voltage variations. Indicating galvanometer is taut wire suspension of high sensitivity. On the right hand side of the pane; are two knobs for setting the needle accurately on 100 for the standard, one serving as fine, the other as coarse control. In addition the panel carries two control knobs on the left hand side. When these knobs are turned all the way clockwise, the zero point of the galvanometer scale indicates zero reflectance. By turning the knobs counter-clockwise the zero reflectance point is suppressed. By means of the coarse and fine control the zero point of the galvanometer scale can be made to correspond to the reflectance of a surface which serves as "dark standard." The scale of the galvanometer from 0 to 100 then covers the range of reflectance values from dark standard to light standard. This kind of operation offers the advantage of furnishing the greatest possible spread if readings within a given range, provided that the standards are



THREE-WAY HELP for Accurate Heating!

On large and small furnaces, Foxboro Recording Potentiometer Controllers provide three important advantages for wartime processes. They automatically hold temperatures closer—save rejects. They enable quicker, more-exact operation by "green" workers. And they give continuous records to check up every batch.

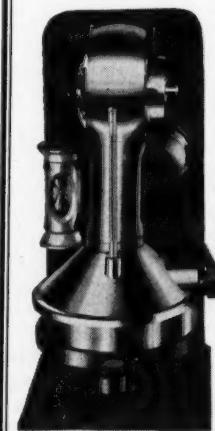
Designed in every detail to cut wear, lost motion, servicing. Exclusive, simple balancing mechanism; "unbreakable" galvanometer suspensions; ball bearings at important pivots.

Write for detailed Bulletin 190-5. The Foxboro Company, 190 Neponset Ave., Foxboro, Mass., U. S. A. Branches in principal cities.

FOXBORO POTENTIOMETER INSTRUMENTS
TRADE MARK

When inquiring specify CEP5229 — see information request blank, pgs. 2-3

**Rapid
Accurate**



**MOISTURE
CONTROL**
with the
**DIERTERT
MOISTURE
TELLER**

The Dietert Moisture Teller determines moisture content accurately and rapidly by forcing electrically heated air through the test sample. The drying temperature may be controlled closely with thermo regulator. Cost of operation is very low. Used

by many of the largest chemical and allied industry plants.

Send TODAY for full information

HARRY W. DIERTERT CO.

9330 G Roselawn Ave.

Detroit, Michigan

When inquiring, specify CEP5230 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW



To keep production wheels humming by co-operating with the demands of Uncle Sam and industry.

To give as quick a delivery as possible.

To build strong, well-made thermometers for many years of service.

To furnish guaranteed accuracy and a mercury column with a wide RED column for quick reading.

To help you in selecting the right thermometer for your needs.

To do our very best for everyone that we can.

So that we can all enjoy an Early Victory. We ask your co-operation and we pledge ours.

Remember PALMER Thermometers on your next order. (Catalog No. 300-D sent promptly)



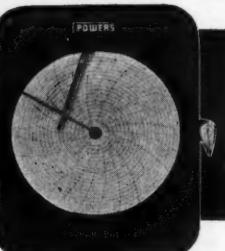
THE PALMER CO.

INDUSTRIAL LABORATORY, RECORDING & DIAL THERMOMETERS
2519 NORWOOD AVE., CINCINNATI, NORWOOD, O.
CANADIAN BRANCH: KING AND GEORGE STS., TORONTO

When inquiring specify CEP5231 — see information request blank, pgs. 2-3

POWERS

INDICATING
and
RECORDING THERMOMETERS



Some of the many different types of Dial Indicating and Recording Thermometers we make are shown here. We also make Recording Regulators and Regulators combined with easy to read Indicating Thermometers. Write for Bulletins. Specify type of instrument in which you are interested.

THE POWERS REGULATOR CO.
2756 Greenview Avenue, CHICAGO

Offices in 47 Cities—See your phone directory

50 Years of Temperature and
★ Humidity Control ★

INSTRUMENTS

properly selected for the range of reflectance values of the samples to be tested. The green, red and blue filters are designed so as to make this instrument suitable for purposes of objective color specification and color matching. A battery operated model No. 600 and a model 610-A for infra-red reflections are also available.

PHOTOVOLT CORP., Dept. CEP, 95 Madison Ave., New York, N. Y.

When inquiring specify CEP5233 — see information request blank, pgs. 2-3

Improved Vernier-Set Timers for Machine and Process Operations

One piece bakelite terminal block for external wiring; leaf spring contact for positive make-break action; special wiring throughout

Uses — For accurately controlling machine and process operations in molding presses, die casting machines, automatic weighing, alarms and signals, automatic mixing, cutting machines, soaking time control and similar applications.

Features — One piece molded bakelite terminal block accomodating all external wiring to clearly marked screw post terminals, as well as bridge positions for easy selection of desired arrangement. Leaf spring contact for positive make-break action. Load and timer circuits wired independently on all types, but timer and load circuits can be wired together by simply placing an external jumper across L2 and C terminals. Flaminol and special wiring employed throughout.

Description — These timers are available in two types, normal clutch action for resetting up on power failure and reverse clutch action for non-resetting on power failure. Standard built-in features include Telechron motor, simple knob setting without locking device, use of vernier scale for micro settings, $\frac{3}{8}$ in. fine silver contacts, hand adjustments to slides and bridges for changing operating functions in the field. Variety of sheet metal housings for surface or flush mountings, as well as cast iron explosion-proof cases for one or two timers are available. Dials may be selected from a selection of ranges. Standard units may operate from 110 or 120 v., 25, 50 or 60 cycles. Load contacts rated to carry 25 amps. at 110 v. AC non-inductive, frequently eliminating use of intermediate contractors, or relays.

AUTOMATIC TEMPERATURE CONTROL CO., Dept. CEP, 34 East Logan, Philadelphia, Pa.

When inquiring specify CEP5234 — see information request blank, pgs. 2-3



VERNIER SET TIMER . . . has simple knob setting without locking device

GET READY now!
for WINTER

with
ARMSTRONG
Low Cost, Positive
HUMIDIFICATION!

1. PREVENT loss of weight, strength or quality of hygroscopic materials.
2. IMPROVE workability of materials.
3. CONTROL drying processes.
4. CONTROL trouble-some or dangerous dust and static conditions.
5. PROVIDE healthier working conditions.



Now's the time to take steps to overcome the dry air problems created every winter when the heat is turned on. Armstrong Steam Type Humidification is the logical answer. It offers you a combination of advantages found in no other humidification method:

LOW COST—BIG CAPACITY—Complete units with Friez humidistat and all other accessories, capable of handling up to 40,000 cu. ft. of space or more, list as low as \$100.

EASILY, QUICKLY INSTALLED. Just connect into existing steam supply lines and your lighting circuit.

PRECISION CONTROL. Automatic response to sensitive humidistat insures constant relative humidity.

LOW COST OPERATION. Uses steam, available to most plants at a dollar a ton.

TROUBLE-FREE. Seldom requires attention.

QUIET. New acoustically engineered design.

Write today for full details and ask for a partial list of the hundreds of users who are experiencing the benefits of this modern humidification method.

HOW ONE USER BENEFITED:



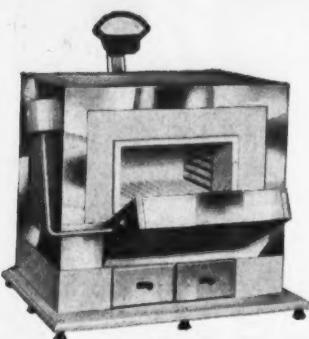
The Acme Backing Corporation, Brooklyn, who installed seven CK-2 Armstrong Humidifiers to reduce an extreme fire hazard, reports "complete satisfaction" and "relative humidity raised to sufficient percentage even though there is a complete air change every two minutes."

QUESTIONS on relative humidities recommended for various industries, on humidification in general and on Armstrong Humidifiers are answered in this informative bulletin. Sent on request.

ARMSTRONG MACHINE WORKS
880 Maple Street, Three Rivers, Michigan

When inquiring specify CEP5235 — see information request blank, pgs. 2-3

When inquiring specify CEP5232 — see information request blank, pgs. 2-3



HUPPERT LABORATORY FURNACES

Accurate —
Sturdy
Outstanding
Valves

Model illustrated
\$150.00
COMPLETE

Designed for heat treating various metals, laboratory samples and test work. Has three heat ranges: 0-800° F., 800-1200° F. and 1200-2000° F.

Furnished with removable porcelain tray, may be had with or without pyrometer, has counter weighted door, fully enclosed contacts, stainless steel frame and door frame housing and Transite base.

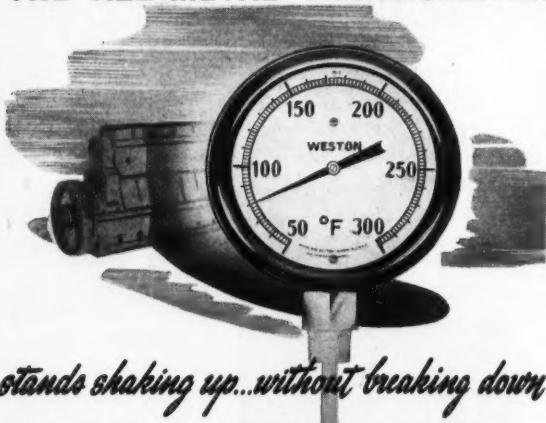
Operates on 110 v. AC or DC; min. load 800 w., max. load 1750 w. Special voltages also available at additional cost. Inside dimensions: 8" wide, 4" high, 6" deep (2" throat).

Write For Free Catalog

K. H. HUPPERT
166 W. WALTON PLACE CHICAGO, ILL.

When inquiring specify CEP5236 — see information request blank, pgs. 2-3

THE ALL-METAL THERMOMETER



stands shaking up...without breaking down

The reason why the WESTON Thermometer can "take it" is found in its simplified, all-metal construction. There is but one moving element, and even that part is made of enduring metal. There is no gas or liquids...no capillary...no fragile members. Thus the WESTON not only resists ordinary breakage but it also stands up in applications where vibration is present...maintaining its high initial accuracy (within 1% over entire scale) over far longer periods. Available in types, sizes, ranges and stem lengths for Diesel and many industrial applications. Descriptive literature available on request. Weston Electrical Instrument Corporation, 586 Frelinghuysen Ave., Newark, N. J.

WESTON All-Metal TEMPERATURE GAUGES

When inquiring specify CEP5237 — see information request blank, pgs. 2-3

INSTRUMENTS

Electronic Micrometer Eliminates Human Element in Readings

Measures exact thickness to .0001 in., reads same as hand micrometer



ELECTRONIC MICROMETER... for testing plastics and compressible materials

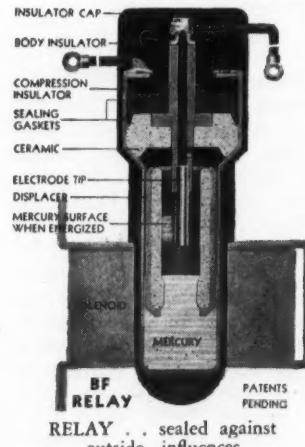
the operator's judgment and skill. Exact thickness measurement (to .0001 in.) of any portion of tested material such as extremely thin condenser sheets or heavy weight bristol. Electronic circuit gives positive indication of setting point independent of "feel" of dial. Thickness is read exactly as with hand micrometer. Instrument operates from any 110 v., 60 cycle circuit.

INSTRUMENT SPECIALTIES CO., Dept. CEP, 30 Peckman St., Little Falls, N. J.

When inquiring specify CEP5238 — see information request blank, pgs. 2-3

Hydrogenized Blackout Relays Are Explosion Proof

Have wide application in dangerous areas; free from all outside influences



RELAY... sealed against outside influences

gen pressure. When the coil is energized the plunger is pulled down and displaces the mercury, causing it to rise

Uses — For uniform thickness testing of all types of plastics and similar materials.

Feature — Eliminates human element in micrometer readings.

Description — This portable instrument has been thoroughly tested in the plastics industry.

Highly sensitive electronic tubes replace

the operator's judgment and skill. Exact thickness measurement (to .0001 in.) of any portion of tested material such as extremely thin condenser sheets or heavy weight bristol. Electronic circuit gives positive indication of setting point independent of "feel" of dial. Thickness is read exactly as with hand micrometer. Instrument operates from any 110 v., 60 cycle circuit.

"Anets" LABORATORY CABINETS

Speed-Up War Work by Providing Automatic Temperature and Humidity Control

Used by LEADING FIRMS THROUGHOUT THE U.S.A.

for DRYING . . . BAKING

- ★ MOISTURE ABSORPTION CONTROL
- ★ UNIFORM PROCESSING AND CURING
- ★ HEAT AND MOISTURE EVAPORATION
- ★ FAST PRODUCTION, OVEN DRYING
- ★ CHEM. RESEARCH • BACTERIA CULTURES
- ★ GRADUATED COOLING FOR UNIFORMITY
- ★ PRECISION CHEMICAL DRYING
- ★ FABRIC, PLASTIC AND WOOD CURING

ANY SIZE UP TO LARGE INSULATED ROOMS

If you have other war production problems where automatic temperature and humidity control can step-up delivery, prevent waste and insure uniform quality . . . then call on Anetsberger Bros. Write telling us the size of box room, temperature and humidity range desired.

PORTABLE AUTOMATIC A.S.M.E. STEAM BOILER

A fully automatic A.S.M.E. approved boiler from 2 H.P. up. Gas or oil fired. Small, compact and powerful. See Bulletin No. 117.

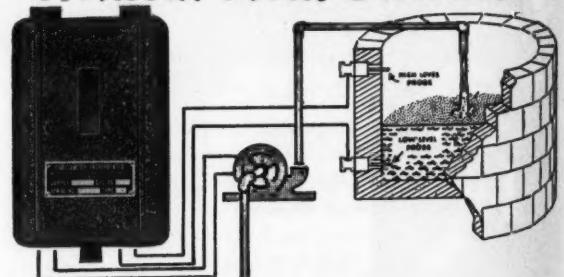
LET US BID ON YOUR SUB-CONTRACT WAR ORDERS

Anets equipment is used by Army, Navy, Marine and Air Corps. We've been in war production for over a year. Send in your blueprints. Prompt bids submitted. Write

Anetsberger Bros. 3320 Elston Avenue, Chicago, Illinois

When inquiring specify CEP5239 — see information request blank, pgs. 2-3

LEVEL CONTROL Without Float Switches



PHOTOSWITCH ELECTRONIC LEVEL CONTROLS
FOR ALL LIQUIDS & POWDERS

- Used with explosives and corrosives
- No mechanical parts — unlimited life
- Installation cost negligible — replaces float switches

BOILER FEED WATER CONTROL — LOW LEVEL ALARM

Photoelectric and electronic controls
for all industrial purposes

SEND FOR
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COVERING
LEVEL CONTROLS

PHOTOSWITCH INCORPORATED
CAMBRIDGE • MASSACHUSETTS

District offices in **P** all principal cities

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INSTRUMENTS

in the steel chamber until contact is made with the electrode.

Description — Free from all outside influences. All metal, permanently sealed under hydrogen at high pressure. Quenched arcing. Non-oxidizing contacts. BF relay capacity up to 30 amps, CF to 65 amps. Can be built in any size or kind, time delays included.

DURAKOOL, INC., Dept. CEP, 1010 No. Main St., Elkhart, Ind.

When inquiring specify CEP5241 — see information request blank, pgs. 2-3

Remote Automatic Control Of Gas Pressure

Twelve-page data folder on the application of tele-metering to the measurement of gas distribution pressures contains information concerning remote pressure measurements and remote automatic pressure control. A number of typical installation are described and sketches are included to show method of use. Available upon request. Specify Data Sheet No. 39.

BRISTOL CO., Dept. CEP, Waterbury, Conn.

When inquiring specify CEP5242 — see information request blank, pgs. 2-3

Recording Photoelectric Spectrophotometer

A most comprehensive survey of this instrument is presented in an eight-page bulletin. Specific uses and benefits of the equipment in relation to all color problems encountered in the laboratory or plant are listed and explained. The construction and design of the various essential parts of the device are explained in detail and a special section including large diagram offers a thorough treatment on the principle of operation. Booklet GEA 3680 available on request.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N. Y.

When inquiring specify CEP5243 — see information request blank, pgs. 2-3

"Sub" Thermometer Meets Problems of Limited Space and Vibration

Originally designed for naval use, five inch thermometer finds wide industrial application

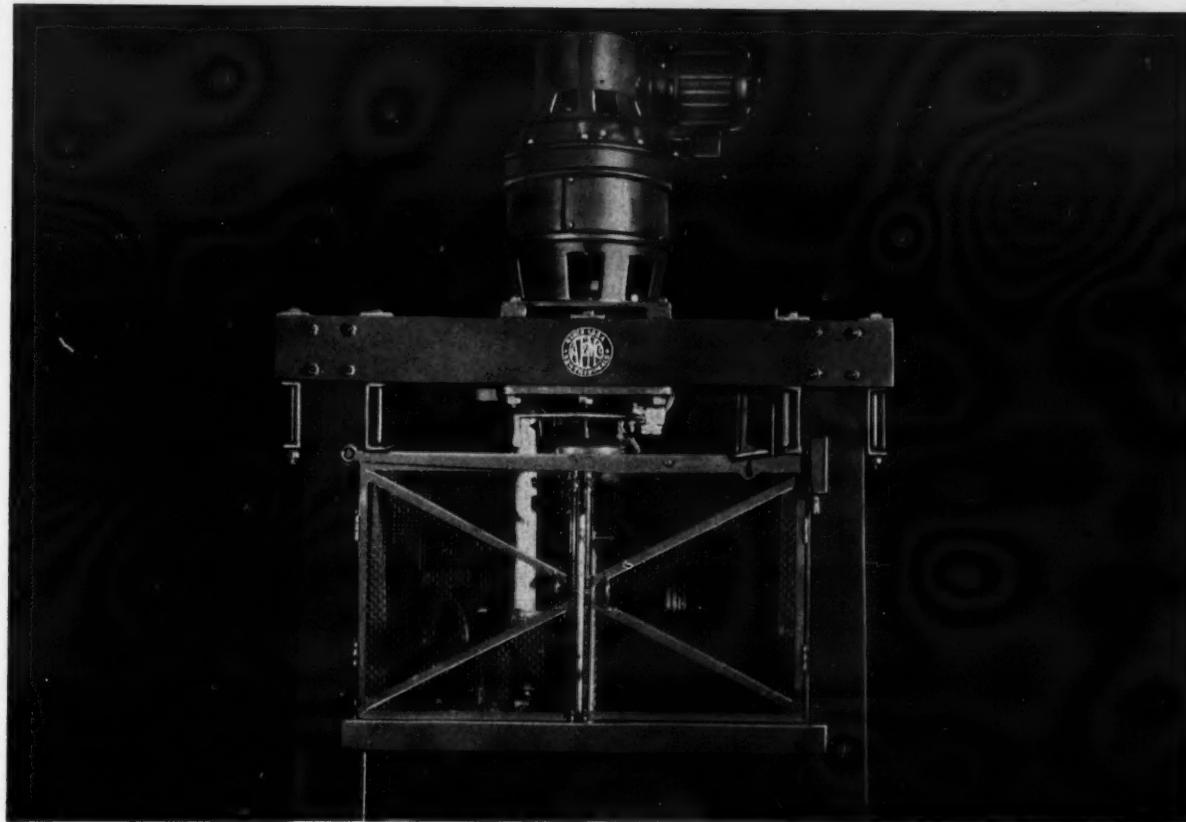
Uses — For use in limited space or in equipment subject to vibration such as diesel engines, air compressors, lubricating lines on motor and small diameter brine, steam or water lines and in many other applications.

Features — Identified as submarine thermometer as it was originally developed to try to meet the strict Navy specifications. Its capacity for such service is indicative of its performance in industrial applications.

Description — One piece construction eliminates separate front and top caps which might loosen under vibration. Sturdy glass front is held in place by a string bezel but when necessary is easily removed. Two types of separable socket connections are offered making installation and removal easy. Choice of connection to suit application. Available in straight, angle, right side angle, left side angle or oblique stems to afford best angle position for any location.

TAYLOR INSTRUMENT COMPANIES, Dept. CEP, Rochester, N. Y.

When inquiring specify CEP5244 — see information request blank, pgs. 2-3



Watching R.P.M. turn A.M. into P.M.

Doing the afternoon's work in the morning . . . by increasing production 50% . . . has sometimes resulted from A T & M's centrifugal engineering

precipitate and decant in one operation.

FOR CENTRIFUGING GETS THE JUMP ON TIME!

Take precipitation, for instance. If you are now using tanks to precipitate particle-sized substances, such as oxides from mother liquor, or slimes from suspension, centrifugal force is always faster with the added advantages of finer clarity, dryer cake. And it's easy to remove cake from bottom of basket on to conveyor car.

One firm that used to wait for lead oxide to settle in a tank of acid liquors now cuts process time more than one-half, with an A T & M centrifugal to

CENTRIFUGING ALSO GETS THE JUMP ON SPACE!

Whether you're precipitating, filtering, impregnating, or dehydrating, you'll find that centrifugals take up less room than cumbersome tanks, kiers, autoclaves, or costly drying machines. And centrifugals themselves can be adapted to available head-room. A T & M engineers have often done so.

A T & M centrifugals are furnished in all machinable metals and coatings, link suspended, suspended, or base-bearing.

A T & M engineers are available, as national needs permit, to help you increase production, conserve man-power and materials, and save floor space. Address **American Tool and Machine Co., 1425 Hyde Park Avenue, Boston. Or write 303 Church St., New York, N.Y.**

BLUE-PRINTS FOR TOMORROW . . . PLANNED TODAY

A T & M centrifugal engineering, now speeding production for victory, has many improvements in store for peace-time industry. Consult with us now for future improvement of any extraction, dehydration, filtration, precipitation, impregnation or coating process.

A T & M CENTRIFUGALS SAVE TIME AND

When inquiring specify CEP5245 . . . see information request blank, pgs. 2-3

**A NEW
U-TYPE MANOMETER FOR
Greater Visibility
BY MERIAM**

* This U-Type Manometer — KNOWN AS MODEL B-1169 — is designed on the same principle of clean-out construction as the standard clean-out U-type manometer manufactured by Meriam for the past 10 years.

This new unit offers the additional advantage of GREATER VISIBILITY of the indicating column. The tube bore is 7/16" diameter to give a very definite and flat liquid meniscus. The scale is located between the tube legs with graduations and figures in black on a light background. The major line divisions are indicated by figures 1/2" high.

The glass tube is protected on 3 sides by a rigid frame. The instrument head of semi-steel is removable from the manometer body by loosening the hexagonal nut from the top of the head, permitting easy cleaning and filling of glass U-tube without disconnecting the head section from the piping.

This Meriam U-Type Manometer is designed for maximum line pressure of 100 lbs. per sq. in. Complete information is contained in Bulletin 23. Write for copy.

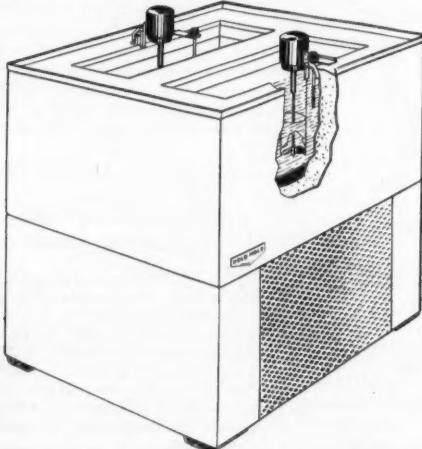


THE MERIAM CO.

1989 West 112th St. • Cleveland, Ohio

When inquiring specify CEP5246 — see information request blank, pgs. 2-3

KOLD-HOLD Hot and Cold Baths



From Plus 200° F. to Minus 70° F.

For production calibration and type testing of instruments, temperature processing of sub-assemblies, rapid cooling and heating of metal parts in shrink fits, and for rapid aging of heat-treated parts. Horizontal model also available . . . details on either on request.

New York — 1819 Broadway

Chicago — 201 N. Wells

KOLD-HOLD MANUFACTURING CO.
334 N. Grand Ave., LANSING, MICH., U.S.A.

When inquiring specify CEP5247 — see information request blank, pgs. 2-3

PRODUCTION

"A Guide to Wartime Care of Electric Motors" — New Handbook

A practical aid in motor maintenance for all workers

**A Guide
to
Wartime
Care of
Electric
Motors**

*Published by
ALLIS-CHALMERS MFG. CO.
Milwaukee, Wis.*

This 24 page, pocket-size handbook summarizes the basic principles every worker should know in handling electric motors in easy to read, practical style. Terse, to the point, it's a quick easy guide to keeping motors at top efficiency, — motors of all makes.

It covers (a) right and wrong methods of combating dust, (b) stray oil and how to remove it, (c) dangers from moisture, (d) lubrication requirements and related adjustments, (e) misalignment — how to check its causes and correct them, (f) vibration and how to eliminate it, (g) minimizing wear on slip rings and commutators, (h) how to safeguard against overloads and underloads. Numerous other subjects are also discussed.

Many cartoons effectively visualize important points — all the data is summarized in tabulated form in the back of the book — further classification as to (1) symptoms you can see, (2) symptoms you can hear, and (3) symptoms you can feel. Causes and cure are described in each case.

The handbook should be of especial value to workers whose experience with electric motors is limited, and also helpful to those more seasoned. Hand book is available upon request.

ALLIS-CHALMERS MFG., Dept. CEP, Milwaukee, Wis.

When inquiring specify CEP5248 — see information request blank, pgs. 2-3

Have You A New Product?

If you have recently developed a new or improved product, a piece of laboratory or plant equipment or a new material, of specific interest in any line of chemical and process manufacturing . . . send it to our Editors. Through CHEMICAL EQUIPMENT PREVIEW'S editorial pages they will introduce it to this great field . . . with more than 27,000 copies of this publication covering every plant. This service costs you nothing, and there is no obligation. Write — The Editors.

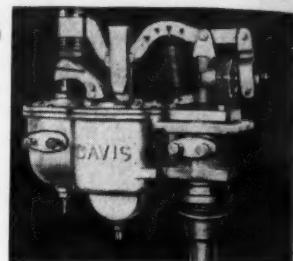
CHEMICAL EQUIPMENT PREVIEW
737 N. Michigan Avenue

Chicago

Illinois

**Positive, Automatic
TWO-STEP FLUID FLOW**

**CONTROL
with the
DAVIS
No. 97TH
SOLENOID
VALVE**



WHEREVER processing requires proportioning or throttling of liquid flow, there is a potential time and money saving use for the Davis No. 97TH Two-Step Solenoid Valve. One solenoid opens the single-seated, pilot-stem valve wide for full, practically unrestricted flow. The second solenoid throttles the flow to any predetermined degree desired. Valve closes tight without sticking. Dia-Ball Patented Packless Head eliminates packing maintenance and handles highly volatile liquids without leakage. All parts readily removable for cleaning. Sizes from 1/4" to 2". Body and trim in bronze, stainless steel, monel or nickel. Write for Bulletin S-1, containing complete data on No. 97TH and other Davis Solenoid Valves for all types of electrical control service. DAVIS REGULATOR COMPANY, 2562 South Washtenaw Avenue, Chicago, Illinois.

**DAVIS
REGULATOR CO.**

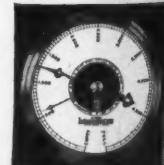
When inquiring specify CEP5249 — see information request blank, pgs. 2-3

**5 Reasons Why We Measure
Our Valuable Stored
Liquids
With
LIQUIDOMETER Tank Gauges**

"THEY'RE ALWAYS DEPENDABLE"

- 1 100% automatic.
- 2 No pumps, valves, or auxiliary units needed to read them.
- 3 Models available so that readings can be taken remotely from or directly at the tank.
- 4 Accuracy unaffected by specific gravity of tank liquid.
- 5 Approved for gauging hazardous liquids by Underwriters' Laboratories and other similar groups.

Write for complete details



THE LIQUIDOMETER CORP.
38-18 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring specify CEP5250 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

PRODUCTION

Foot Operated Hydraulic Drill Vise Exerts 10,000 Lbs. Pressure

Speeds work, frees and protects operator's hands, no outside power or air required, vise jaws tightened and released in a few seconds



NEW DRILL VISE . . . operated by hydraulic foot control

Hands are kept free.

Operation — Requires no outside power or air supply. Work is placed between jaws of vise. Depression of middle pedal of foot control moves rear jaw just sufficiently to grip the work. Right of booster pedal moves jaw maximum of $\frac{3}{16}$ in. for each downward stroke and exerts a maximum pressure of 10,000 lbs. per sq. in. One movement on left pedal releases work. If necessary during a machining operation to retighten work, one downward movement of foot re-establishes a 10,000 lb. per sq. in. pressure.

Description — Conveniently shaped drill press vise (but without the usual screw and handle). Connected to it by a 6 ft. length of flexible rubber tubing is a hydraulic foot control base. Parts are readily portable, making it easy to move from one machine to another. Both jaws are semi-steel castings. Hardened steel jaw plates (standard) in vise. Jaw plates held by two $1\frac{1}{2}$ in. 20 thread machine screws. They can be removed or replaced with special jaw faces. Faces are aligned for .001 in. accuracy. Cross slots are slide ears are provided so that the vise can be bolted either lengthwise or across the work table. All oil containing parts of steel. Width of jaws 6 in., depth of throat 3 in., width of jaw opening 5 in. Drill vise measures 30 in. long, $8\frac{1}{2}$ in. wide, $5\frac{1}{2}$ in. high. Weight 74 lbs. Hydraulic foot control — 11 in. high, $10\frac{1}{2}$ in. wide, 14 in. long, weight 36 lbs. Total shipping weight, 120 lbs.

STUDEBAKER MACHINE CO., Dept. CEP, 9 So. Clinton St., Chicago, Ill.

When inquiring specify CEP5253 — see information request blank, pgs. 2-3

If you are a responsible process executive **CHEMICAL EQUIPMENT PREVIEW** will be sent to you personally if you request the publishers to do so . . . there will be No Charge. See request slip between pages 78 and 79.



In actual performance, Ohmite Rheostats have been operated over a million times without servicing of any kind. It's the design, the construction, that makes them give such smooth, dependable, close control. You find them on duty in laboratory and production equipment to control the speed of centrifuges, the heat of electric ovens, the intensity of light, and the potentials of electro-chemical reactions. Ten sizes from 25 to 1000 watts in stock and special units. Ohmite Engineers are glad to help you.

Write on company letterhead
for 96-page Catalog and
Engineering Manual No. 40.

OHMITE MANUFACTURING CO.
4917 Flournoy St. • Chicago

When inquiring specify CEP5251 — see information request blank, pgs. 2-3

CONTINUOUS VS. PERIODIC ANALYSIS



Cambridge Gas Analyzers give industry continuous records, accurate and automatic. No intermittent sampling . . . no chemicals. These Analyzers are used for determination of

OXYGEN in flue and stack gases and in furnace atmospheres

DISSOLVED OXYGEN in boiler feedwater

CARBON DIOXIDE in flue gases

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CARBON MONOXIDE, NITROGEN, ARGON and many other gases can be determined by available Cambridge analyzers designed to meet specific industrial conditions.

OTHER CAMBRIDGE INSTRUMENTS are available for use of Industry and Science.

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Cambridge Gas Analyzers

CAMBRIDGE INSTRUMENT CO., Inc.

3732 Grand Central Terminal, New York, N. Y.
PIONEER MANUFACTURERS OF PRECISION INSTRUMENTS

When inquiring specify CEP5252 — see information request blank, pgs. 2-3

SEPTEMBER-OCTOBER, 1942

Got your copy OF THE NEW MOYNO PUMP BOOK?

Send for it NOW—
to Help Solve Your
TOUGH Pumping
Problems!

Now is the time to give your pumping setup a really critical analysis. For, with today's demands, the type of *pumps* you use might well account for the difference between output goals met or missed—and between profit and loss.

This new R & M Moyno Pump book will aid you in making that analysis, because it compares the revolutionary Moyno Pump with other types—weighing its advantages on the scale of actual experience in countless industries. The Moyno has *cut maintenance costs* to a fraction of former bills, because of its unprecedented resistance to wear. It has slashed down-time 'way down, because of its extreme accessibility. And it has improved product *quality* by handling heavy viscous and abrasive liquids—with out turbulence or cavitation.

Get your copy of this new book! It was written by pump engineers for *other* engineers and production men—in specific, ungarnished, factual terms. And it's yours . . . for the asking. Mail this coupon today!

ONLY ONE MOVING PART!

Here's the patented principle of the R & M Moyno Pump's amazing performance. A single-threaded helical rotor revolves in a double-threaded helical stator, providing pumping action like that of a piston moving through a cylinder of infinite length.



Moyno pumps are manufactured under R. Moineau patents.

ROBBINS & MYERS, Inc., Moyno Pump Division, Springfield, Ohio

Please send me the new 8-page book on the R & M Moyno Pump.

Name . . .

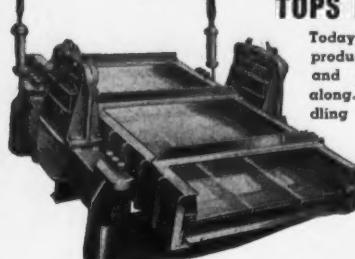
Firm Name . . .

Address . . .

Pump will handle . . .

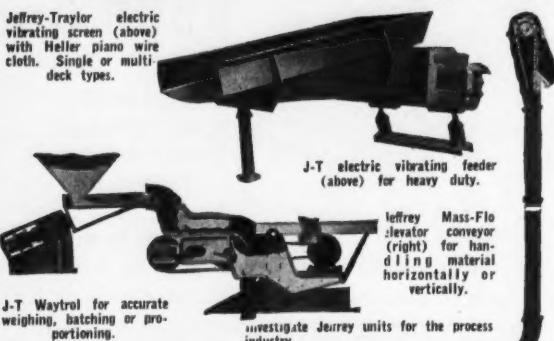
When inquiring specify CEP5254 — see information request blank, pgs. 2-3

FOR GREATEST EFFICIENCY TOPS IN PRODUCTION



Today the cry is for greater production — keep material and equipment moving right along. You can maintain handling efficiency and keep production rolling for war needs with Jeffrey equipment . . . a complete line of improved units for conveying, screening, elevating, weighing and feeding all classes of material.

Jeffrey-Traylor electric vibrating screen (above) with Heller piano wire cloth. Single or multi-deck types.



J-T electric vibrating feeder (above) for heavy duty.

J-T Waytrol for accurate weighing, batching or proportioning.

THE JEFFREY MFG. CO.

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GET Printed WEIGHTS STOP COSTLY ERRORS

Today speed is vital in production. Toledo's answer is the Printweigh which combines unerring printed records with greatest speed. It prints BIG figures...on thick tickets...sheets...or strips...with extra copies. It's simple in operation...prints direct...operates in $\frac{1}{6}$ second. Send for bulletin. Toledo Scale Company, Toledo, Ohio.

TOLEDO
PRINTWEIGH
SCALES

When inquiring specify CEP5256 — see information request blank, pgs. 2-3

NEW LITERATURE

The following literature has been issued recently by manufacturers of the products discussed and is available to food manufacturing executives on request. Address requests to the publishers by using handy request form, pages 2-3, or write to the manufacturers direct.

Rotary Positive Blowers Find Applications in Many Branches of Process Industries

Twenty-page-and-cover bulletin, $8\frac{1}{2} \times 11$ ins. presents in comprehensive manner detailed information on the design, construction, operating principle, advantages and applications of positive displacement blowers. The importance of blower gear cutting is emphasized and various illustrations and data on the manufacturer's production of gears is given. Various cut away views augment the text concerned with design and construction. Photos show the equipment in actual use in such varied fields as sewage treatment and water works service, in exhausting and combination exhausting and blowing service in chemical process industries and in pneumatic conveying of granular and bulk materials, in oil refining, in agitation and other applications in food industry, in yarn drying. Complete specifications are given in convenient tables. Bulletin No. 22-23-B-11 is available upon request.

ROOTS-CONNERSVILLE BLOWER CO., Dept. CEP, Connerville, Ind.

When inquiring specify CEP5257 — see information request blank, pgs. 2-3

Conical Ball and Pebble Mills

Twenty-eight-page bulletin presents a clear and detailed description of conical ball and pebble mills and dealing with such subjects as principles of operation, construction, control of grining, various types of feeders and discharge devices and linings. Text is augmented with a number of sectional drawings and photos of equipment in actual operation are of particular interest. There is a complete and convenient listing and tabulation of specifications and a section devoted to auxiliary equipment. Bulletin 13-D is available upon request.

HARDINGE CO., INC., Dept. CEP, York, Pa.

When inquiring specify CEP5258 — see information request blank, pgs. 2-3

Magnetic Separating Equipment

Approved methods of magnetic separation and magnetic separating equipment are given comprehensive treatment in a recently issued bulletin. Principles of separation, concentration, reclamation and purification of materials by magnetic separation methods and suggestions helpful in determining the type of equipment required are discussed. Bulletin No. 800 available upon request.

STEARNS MAGNETIC MFG. CO., Dept. CEP, Milwaukee, Wis.

When inquiring specify CEP5259 — see information request blank, pgs. 2-3

Portable Electric Belt Vulcanizers

Four-page-illustrated-catalog section gives complete specifications of single and double platen vulcanizers for conveyor belts, including the type of current necessary to operate them and temperature range of heating elements. Section 2158 available upon request.

B. F. GOODRICH CO., Dept. CEP, Akron, Ohio.

When inquiring specify CEP5260 — see information request blank, pgs. 2-3

Catalog on Solvents

Exceptionally complete and practical catalog on solvents of 117 pages—convenient-pocket-size and plastic bound so that it lays flat for easy reference is among latest addition to literature on this subject. In dealing with each product included in these pages history, development and applications are interestingly traced. Specification and property listings are most complete. Over forty products are listed. Shipping requirements and procedures are tabulated at the back of the volume.

COMMERCIAL SOLVENTS CORP., Dept. CEP, Terre Haute, Ind.

When inquiring specify CEP5261 — see information request blank, pgs. 2-3

Wet, Dry and Cast Process Porcelain Products

Custom made porcelain products in a wide variety are shown in large size photo illustrations which are the feature of a 12-page $8\frac{1}{2} \times 11$ in. booklet. Included in the interesting variety shown are dry and wet press electrical porcelain, refractory electrical porcelain, forms for dipped rubber goods, tubing and various items for chemical use. Some stock items are included in addition to those made on order. Booklet is available upon request.

COLONIAL INSULATOR CO., Dept. CEP, Akron, Ohio.

When inquiring specify CEP5262 — see information request blank, pgs. 2-3

ReWinding & Slitting Machines

Machines for winding, unwinding, re-winding and slitting are illustrated and described in interesting detail in an attractive two-colored-four-page-bulletin. Photos are large and clear and aid greatly in visualizing the specifications and performance data furnished in this connection. These machines can handle materials which vary in thickness such as waxed or coated papers, varnished cambrics, rubberized fabrics, fabrics, abrasive papers and cloth and there are units which slit and re-wind boards up to 20 points in thickness. Dimensions, speeds, and other essential data are provided. Bulletin available upon request.

JOHNSTONE ENGINEERING & MACHINE CO., Dept. CEP, Downton, Pa.

When inquiring specify CEP5263 — see information request blank, pgs. 2-3

Fluorescent and Incandescent Lighting

88-page-and cover spiral bound catalog presents detailed descriptions numerous illustrations of lighting fixtures and typical installation for both industrial and office application. Incandescent, fluorescent and mercury types are included. Numerous charts are provided listing essential data and specifications in connection with the various units shown. Catalog No. 4 available upon request.

CURTIS LIGHTING, INC., Dept. CEP, 6135 West 65th St., Chicago, Ill.

When inquiring specify CEP5264 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

NEW LITERATURE

Molten Salt Baths for Case Hardening

72-page-and-cover spiral bound manual gives complete and up-to-date information on case hardening of steel in baths containing sodium cyanide. The manual provides pertinent data regarding the operation of case hardening and heat treating baths. Typical of the subject matter presented are: Use of simple cyanide baths for reheat media for high carbon and oil hardening alloy steels and for carbonized work; nitriding of high speed steel and other high alloy tool steels. Also of interest is the material on accelerated salt bath for efficient production of mixed carbon-nitrogen cases on plain carbon and on alloy carburizing steels and that on carburizing salt for production of deep cases at usual carburizing temperatures. Other chapter headings are heat treating, heat coloring, cyanide disposal, analytical methods, safety. Conversion tables and other summarized data complete the volume. Manual titled "Molten Salt Baths" available upon request.

E. I. du PONT de NEMOURS & CO., Electrochemical Div., Dept. CEP, Wilmington, Del.

When inquiring specify CEP5265 — see information request blank, pgs. 2-3

New Type Hose and Self-Sealing Couplings

Hose lines and self-sealing couplings are described and illustrated in great detail in two catalog size folders. A universal type hose designed for use at temperatures of -22 degrees F to +300 degrees F in standard tube sizes which can handle gasoline, alcohol, mineral and vegetable oils and other fluids is designed to reduce weight to a minimum. Originally intended for airplane use it is suited for a variety of applications. Manner in which it may be easily cut and fittings attached is explained. The self-sealing coupling which features easy connection and small resistance to flow is fully described in the second bulletin. Both are available upon request.

AEROQUIP CORP., Dept. CEP, Jackson, Mich.

When inquiring specify CEP5266 — see information request blank, pgs. 2-3

Gravity and Power Conveyors for Materials and Packaged Products

Advanced line of conveyors engineered to meet all package and material handling requirements is described in a 24-page-and-cover illustrated catalog. Interesting conveyor and pneumatic tube applications in various industries handling packaged products are featured. Adaptation of the equipment in metal working, chemical and various industries demonstrated in action photos and performance data. Simplified selection chart combining drawings and text aid in selecting equipment for specific purposes. Catalog 307 is sent upon request.

STANDARD CONVEYOR CO., Dept. CEP, No. St. Paul, Minn.

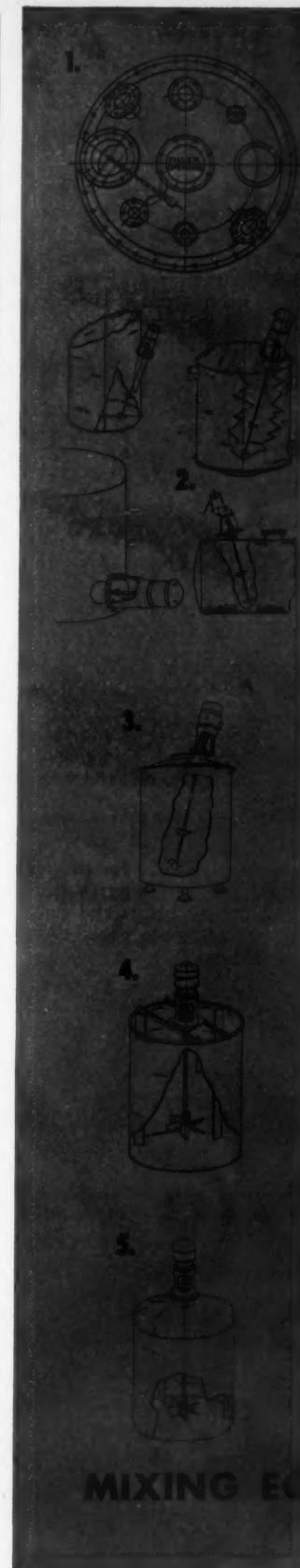
When inquiring specify CEP5267 — see information request blank, pgs. 2-3

Beryllium Copper Fuse Clips and Fuse Terminals

Four-page-bulletin describes design, construction, advantages and application of Beryllium copper fuse clips and screw terminals. Photos and comparative figures show superiority in contact resistance over other clips. Complete specification information is provided by drawings and tables. Folder available upon request.

LITTLEFUSE INC., Dept. CEP, 4757 Ravenswood Ave., Chicago, Ill.

When inquiring specify CEP5268 — see information request blank, pgs. 2-3



MIXING EQUIPMENT CO., INC.

1028 Garson Avenue, Rochester, N. Y.

When inquiring specify CEP5269 . . . see information request blank, pgs. 2-3

UTILIZE EXISTING TANKS OR "OFF STANDARD" NEW VESSELS WITH "LIGHTNIN" MIXERS

REASONS WHY "LIGHTNIN" MIXERS ARE DEMANDED IN DEFENSE PLANTS

1. "LIGHTNIN" Top Entering Mixers can be located anywhere around tank, giving you a clear tank top for most effective location of manholes, flanged openings, observation glass, vapor outlet, thermometer walls, etc.
2. "LIGHTNIN" Top Entering Mixers can be used on any type of tank—open, closed, vapor tight, pressure, vacuum, etc.—with either flat or dished top.
3. "LIGHTNIN" Top Entering Mixers are most efficient since power is transmitted directly through the propeller into the fluid—no power is wasted overcoming inertia of paddle type sweeps. "LIGHTNIN" double mixing action gives slow rotation plus bottom-to-top turnover—completely eliminates dead spots—no baffles needed.
4. "LIGHTNIN" Top Entering Mixers require no space-consuming drive supports. When mounted on a flanged nozzle or manhole, the drive and supports occupy the minimum of space. Minimum head room permits its use in "tight spots." Integral Mounting reduces over-all cost of installation and maintenance.
5. "LIGHTNIN" Top Entering Mixers are "LIGHTNIN" Engineered for easiest servicing. When desired, "LIGHTNIN" shafts and propellers can be withdrawn from tanks through flange nozzle, leaving nothing in tank. Contrast this with welded-in stuffing boxes, cumbersome drives or with paddles which cannot be renewed without cutting open vessel and sometimes removing from building.



For the whole story, send the coupon for complete catalog.

Note on Priorities: All offerings and specifications are subject to such priority government regulations as may be announced from time to time. Immediate shipment for many models and parts.

MIXING EQUIPMENT COMPANY, INC.
1028 Garson Ave., Rochester, N. Y.

Please send me:

- Bulletin B-68—Top Entering Mixers
- Bulletin B-64—Portable Mixers
- Bulletin B-66—Side Entering Mixers
- MI-11—MIXING PROBLEM WORK SHEET

Name.....

Company.....

Address.....

Why chemists like this new improved ELECTRIC HOT PLATE



Only the Top is Hot

due to excellent use of baffles and insulation. Can be handled while operating with no discomfort, and used safely on a wooden surface. The minimum of heat is radiated into the laboratory.

In short, the heat is concentrated where it belongs — in the hot plate surface.

Flat Top Cannot Warp

because the stiffness of the special alloy top plate is assured by heavy supporting ribs between which are packed solid refractory surrounding the resistance wires.

HEATED BY

CHROMALOX ELECTRIC HEATING UNITS

which are available in a wide diversity of forms and capacities for easy application to any industrial requirement — air, liquids, process, machine parts, etc., and backed up by a corps of electric heating experts whose aid is promptly accorded to any manufacturer with a heating problem, upon their receipt of specific details.

Mail the coupon with your business letterhead for a copy of the "Chromalox Book of Electric Heat" which many engineers regard as a handbook on the subject.

EDWIN L. WIEGAND CO.
7517 Thomas Blvd., Pittsburgh, Pa.
Send me details of the Chromalox Hot-Plate
Send me the Chromalox Book of Electric Heat

Name Position

When inquiring specify CEP5270 — see information request blank, pgs. 2-3

NEW LITERATURE . . .

Five Ways to Conserve Copper

How thousands of tons of copper can be conserved in the installation of wiring systems is explained in practical and dramatic style in 20-page-and-cover booklet. The prodigal waste of copper that results in use of old style and still too prevalent type of plant distribution is emphasized. Five basic steps that will effect tremendous savings and provide highly efficient operating conditions are described in chart and bulletin forms. These steps are (1) Cover as much distance with high voltage circuits and as little with low voltage as possible, (2) Locate substations in centers of load areas, — Substation can be located right at the load center even in working areas, (3) Use small size substations, (4) Distribute power at highest practical voltage, (5) Use cable with high temperature insulation to permit further savings in cable copper. Booklet No. GED-1011 available upon request.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N. Y.

When inquiring specify CEP5271 — see information request blank, pgs. 2-3

Calcium Chloride In Refrigeration

72 page book 6 x 9 in printed on fine coated stock which emphasizes the numerous photo illustrations presents a comprehensive treatment of refrigeration processes and materials with special reference to the use and properties of calcium chloride. The contents include chapters on essential requirements and maintenance of refrigeration brine, theory of corrosion and use of inhibitors, mechanics of refrigeration and flow of brine in pipes. Numerous charts and tables on the properties of calcium chloride; ammonia; size, displacement and refrigerating capacities of piping, pumps, tanks and ice cans. Also data on insulating material, storage properties of foods, safety hints for plants and conversion tables make it a valuable reference book. Available upon request. Specify Bulletin No. 30.

CALCIUM CHLORIDE ASSN., Dept. CEP, Penobscot Bldg., Detroit, Mich.

When inquiring specify CEP5272 — see information request blank, pgs. 2-3

100 Standard Types of Counting Devices

Industrial counting devices are illustrated and described in detail in an attractive two-color-eight-page bulletin with laminated cover. Standard models of stroke, lineal and rotary types which meet the great majority of requirements, electrically operated units and several for canning and bottling applications are included. Bulletin No. 100 available upon request.

DURANT MFG. CO., Dept. CEP, 1951 No. Buffum St., Milwaukee, Wis.

When inquiring specify CEP5273 — see information request blank, pgs. 2-3

Stainless Steel Fabricating

Two-color-folder, 8 1/2 x 11 ins. features a variety of large photos of stainless steel equipment including tanks, tubing, heat exchangers, coils. A table showing standard type numbers and analyses is included. Bulletin titled, "Stainless Fabrication and Engineering" is available upon request.

ALLOY MFG. CO., INC., Dept. CEP, 30th & Breton Ave., Pittsburgh, Pa.

When inquiring specify CEP5274 — see information request blank, pgs. 2-3

Vibrating Screens Employ Ovoid Movement

Handy size, 6 x 9 catalog of thirty-two pages describes line of single, double deck and covered vibrating screens. Detailed illustrations, including equipment in actual use, and concise text provide complete information on features of design and construction. The ovoid movement employed in screening action, pressed steel vibrating frame and simplified method of screen mounting are emphasized. Vibrating mechanism, installation methods as well as drive and power requirements all receive separate treatment. An interesting additional section is devoted to a vibrating riddle for sample preparation, general laboratory work and many other riddling and screening services. Catalog No. 107 available upon request.

UNIVERSAL VIBRATING SCREEN CO., Dept. CEP, Racine, Wis.

When inquiring specify CEP5275 — see information request blank, pgs. 2-3

Electric Controls for Heating, Ventilating and Industrial Applications

Electric controls for heating, ventilating, air conditioning and industrial applications are fully described and illustrated in a thirty-six-page and cover condensed catalog. Equipment listed includes control motors in five, two position, industrial, proportioning and spring return types; motor operated valves such as adjustable port, butterfly, double seat, three way, v-ported and others, switches, hygostats and thermostats. Numerous tables of engineering information concerning various valves as well as tables and drawing on dimensions are included. Catalog 1753 available upon request.

BARBER-COLMAN CO., Dept. CEP, Rockford, Ill.

When inquiring specify CEP5276 — see information request blank, pgs. 2-3

Automatic Bag Type Dust Collectors

A six-page-catalog-style bulletin describes in detail the specifications and operating principles of automatic bag dust collectors. Photos showing sectional views clearly illustrate features of construction and design and diagrammatic drawing augments text concerning operation of this dust recovery equipment. In addition to the automatic models, standard models for low cost non-continuous service are also dealt with. Bulletin available upon request.

NORTHERN BLOWER CO., Dept. CEP, 6409 Barberton Ave., Cleveland, Ohio.

When inquiring specify CEP5277 — see information request blank, pgs. 2-3

Handbook Answers Questions on Paint Priorities

Priorities as they apply to paint purchases by industrial users are simply and clearly explained in a pocket-sized, 24-page handbook, "Paint Priorities Primer." The manner in which the data is presented enables the plant executive to know how best to co-operate with the supplier in fulfilling all necessary obligations. Various forms and rulings now in force are dealt with and typical situations are explained. Available on request.

DEVOE & RAYNOLDS CO., INC., Dept. CEP, 1 West 47th St., New York, N. Y.

When inquiring specify CEP5278 — see information request blank, pgs. 2-3

JUSTRITE

Gives You Safety Plus

Extra Economy Extra Efficiency



Justrite Safety Cans help you reduce fire and explosion risk in handling flammable and "pop-off" liquids. Efficiency is increased because balanced design makes handling easier and surer. Economy is built right into the "no splash — no spilling when pouring or filling" features.

Check These Justrite Advantages

- Spout closes automatically.
- Large opening eliminates funnel filling.
- Swinging Handle on 2, 3, and 5 gallon sizes. Balanced for easy carrying and pouring.
- Trigger Handle and spout cover for small sizes.

Write for Folder and Prices Today. JUSTRITE MANUFACTURING COMPANY 2052 N. Southport Ave., Chicago, Ill.

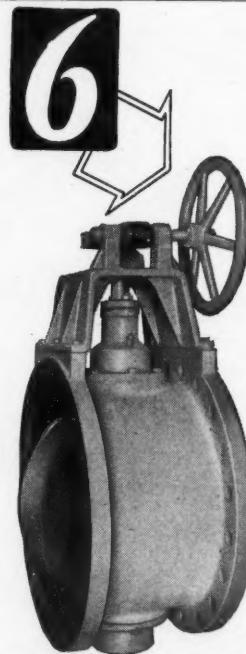
JUSTRITE Safety Products

SAFETY CANS · FILLING CANS · OILY WASTE CANS

APPROVED SAFETY ELECTRIC LANTERNS

When inquiring specify CEP5270 — see information request blank, pgs. 2-3

Six Hand Wheel
Revolutions
Complete Full
Vane Movement



Six revolutions of the hand wheel fully open or close this 125-lb. R-S Butterfly Valve. Compare this quick action with ordinary valves, some of which require as long a time as five minutes for complete opening or closing.

Comparatively light in weight, R-S Butterfly Valves effect a considerable saving in installation costs since less space and supporting structure are required. Remember, too, that the vane closes naturally against the body of the valve and at the correct angle for the wedge-tight shut-off of any material that flows or is forced through a pipe.

For information concerning this and other modern Butterfly Valves, write R-S Products Corporation, 4531 Germantown Avenue, Philadelphia, Pa. Ask for Catalog No. 10-B.

R-S Streamlined BUTTERFLY VALVES

When inquiring specify CEP5280 — see information request blank, pgs. 2-3

NEW LITERATURE

Positive Displacement Pump Type Feeders For Corrosive — Non-Corrosive Solutions

Illustrated four-page-two-color-bulletin describes in detail principles, operation and applications of positive displacement pump-type chemical feeders, available in manually controlled types as well as automatic proportioning chemical feeders. The accuracy of these feeders is described as being achieved through two features — elimination of packing glands and the elimination of mechanically oscillated diaphragms. Also emphasized is the design which completely isolates mechanical parts of the feeder from the chemical being controlled. No lubricant comes in contact with the chemical. Drive methods are described as offering choice of electric motor, air motor, water motor or from any revolving apparatus. Manually adjusted, constant rate types are listed as being available in either single, duplex, triplex or quadruplex electric motor or belt drives. Units are controlled by automatic switches, pH recorders and indicators and other standard controls. Automatics are furnished air or water or electric motor. All models are equipped with micrometer stroke control. Equipment is used in water sterilization, chemical proportioning, maintaining acid and alkali baths and various laboratory operations. Handles mineral acids, organic acids, metal salts. A number of standard types meet the majority of requirements. Bulletin BLW-25 is available upon request.

WILSON-CHEMICAL FEEDERS, INC., Dept. CEP, Buffalo, N. Y.

When inquiring specify CEP5281 — see information request blank, pgs. 2-3

Hydraulic Processing Presses

10-page-and-cover booklet describes and illustrates hydraulic presses for the process industries. Platen presses adapted to compressing, forming, embossing, curing are shown and offered in two distinct types of operating systems: Open circuit with press reversal accomplished with the aid of piston type of operating valve. Closed circuit with press reversal accomplished by reversing the pump output. Their respective advantages, sustained pressure holding service, and flash pressure service where fast operating cycle with smooth shockless reversal is desired are emphasized. Laboratory, dehydrating, blocking and briquetting, forming, molding and extruding presses are all given practical presentation. Design features stressed are equipment of each pump with its own hydraulic pressure generator and compact multi-plunger pump of variable and reversible delivery type directly coupled to electric motor shaft. Available upon request.

HYDRAULIC PRESS MFG. CO., Dept. CEP, Mt. Gilead, Ohio.

When inquiring specify CEP5282 — see information request blank, pgs. 2-3

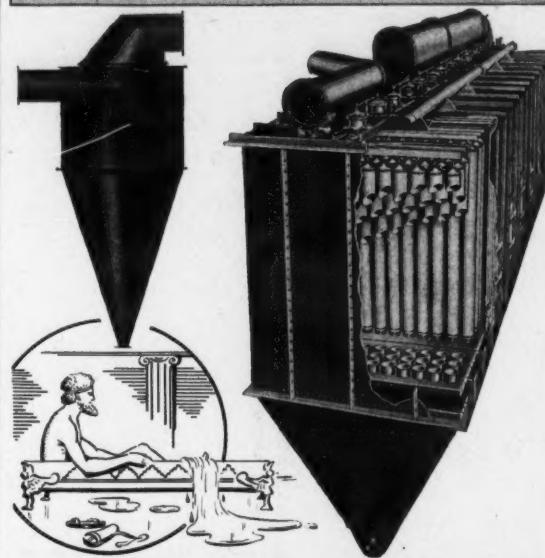
Steel Strapping Safeguards Shipments

Eight-page-folder gives highly detailed presentation of the use of steel strapping in various industries. Numerous photos show actual operations in standardized and specialized applications while a series of fifty-nine sketches demonstrate how shipments of practically every type can be reinforced for economical and efficient handling. Included are tables of sizes, weights and footages of both nailed and nailless types of strapping and of recommended sizes of strapping for given package weights. Folder, "Steel Strapping Shipments," available upon request.

ACME STEEL CO., Dept. CEP, 2840 Archer Ave., Chicago, Ill.

When inquiring specify CEP5283 — see information request blank, pgs. 2-3

Nature Makes the Rules for Dust Collection



YOU COLLECT MORE DUST at Less Cost because Norblo Uses Natural Principles

Drop in velocity is nature's method of collecting dust. In dust collection systems velocity is dropped only by expanding air and air can be expanded only by ample room.

This principle is utilized fully in NORBLO Automatic Bag Type Dust Collectors which have the largest ratio of air expansion space to cloth area regularly employed in any bag type system. In NORBLO H. E. L. S. Cyclone Dust Collectors velocity drop is attained by the patented expanding nozzle and complete absence of vanes or baffles.

NORBLO Dust Collectors based on this natural air expansion principle give you highest dust collecting efficiency at low operating cost, as evidenced by low static drop and consequent power saving. At 2 cents per k. w. h. every h. p. you can save means \$200 to \$400 per year.

Write for new informative and detailed literature on NORBLO Automatic and Standard Bag Type, NORBLO H. E. L. S. Cyclone or NORBLO Hydraulic Dust Collectors.

Norblo

DUST COLLECTION

THE NORTHERN BLOWER COMPANY
6409 BARBERTON AVENUE • CLEVELAND, OHIO

When inquiring specify CEP5284 — see information request blank, pgs. 2-3

**F-M
FREEFLOW
FILTER PLATE***

Every
Drainage Channel
TAPERED
Every
Plate has that extra
CAPACITY

THE faster the flow of filtrate down the drainage member, the more quickly room is made for additional filtrate coming through the cloth. Anything, therefore, which aids in the flow helps to increase the capacity of the plate and the filter. F-M FREEFLOW Filter Plates with their tapered drainage members certainly help. It is like a river with its ever-deepening bed. Flow from tributary streams is taken in stride. Try an F-M Plate. They are made to fit all standard filter presses and constructed of several different woods and of Bakelite. In writing, please give full details about your filtering operation.

FILTER MEDIA CORP.
Irvington-on-Hudson, N. Y.
Chicago — Salt Lake City
9 — FM — 1

When inquiring specify CEP5285 — see information request blank, pgs. 2-3

END LIQUID LEVEL CONTROL PROBLEMS
ONCE AND FOR ALL

with

MAGNETROL

Assures Trouble-Free Control
—For ANY Liquid
—At ANY Temperature
—At ANY Pressure

NO BELLOWS
NO PACKING BOX
NO DIAPHRAGMS
NO ELECTRODES

FRED H. SCHAB ENGINEERING COMPANY, INC.
325 W. Huron Street
Chicago, Illinois

When inquiring specify CEP5286 — see information request blank, pgs. 2-3

Page 38

NEW LITERATURE

New Seventh Edition of Welding Handbook

"Procedure Handbook of Arc Welding Design and Practice," has recently been issued in a greatly enlarged seventh edition. Contains 1308 pages, 1810 photos and illustrations, including drawings, semi-flexible simulated leather cover, gold embossed. It is designed to speed welding design and engineering and provide men in training with the practical help needed to learn the essentials of welding in the shortest possible time. Large numbers of new applications, many of them developed within the past year are given in the chapter, "Typical Applications of Arc Welding." Of particular interest is the material regarding welding symbols, new allowable stresses, pre-heating for welding, "Fleet-Fillet" technique, general metallurgical characteristics of metals and alloys and appearance and styling of welded design. More than 300 individuals and concerns have contributed information and photos. The book is divided into eight sections: (1) Welding Methods and Equipment, (2) Technique of Welding, (3) Procedures, Speeds and Costs, (4) Weld Metal and Methods of Testing, (5) Weldability of Metals, (6) Welded Steel Construction — Machine Design, (7) Design of Arc Welded Structures, (8) Typical Applications of Arc Welding in Manufacturing, Construction and Maintenance. Price postpaid in United States \$1.50 per copy. Elsewhere \$2.00. Available direct from the publishers.

THE LINCOLN ELECTRIC CO., Dept. CEP, 12818 Coit Rd., Cleveland, Ohio.

When inquiring specify CEP5287 — see information request blank, pgs. 2-3

Portable and Large Volume Model Pressure Filters Have High Flow Rate

Four-page-two-color bulletin illustrates and describes a number of pressure filters designed primarily for batch runs. These units are portable and give capacities up to 1400 gph on water thin liquids with standard models and where greater capacity is necessary larger types are available. Emphasized as a feature of this equipment are filter stones in shape of hollow discs or cylinders. Advantages of completely inclosed filtering system; for volatile products in a preventing excessive evaporation; preventing explosive or toxic fumes with hazardous products; protect plant personnel and eliminate leakage. Specifications, flow rates, capacities and performance data are provided in convenient form. This bulletin, No. 60, sent on request.

LE VAL FILTER CO., Dept. CEP, 1319 So. Michigan Ave., Chicago, Ill.

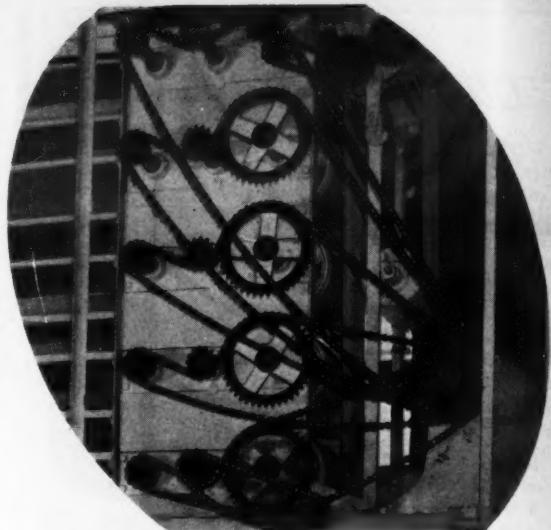
When inquiring specify CEP5288 — see information request blank, pgs. 2-3

Principles of Step-Valve Operation

Bulletin on step-valves devotes its two pages, printed in two-colors, to a clear, highly detailed explanation of operating principles of the manufacturer's step-valve. Sectional drawings serve to emphasize various points discussed in the text. They show valve design and indicate why the double-ball checks used provide non-clogging and self-cleaning advantages even when handling viscous materials. Performance in handling butadiene, salt slurries fibres in suspension and acid sludge and in pumping against pressure up to 20,000 lbs. per sq. in. is cited. Bulletin sent on request.

MILTON ROY PUMPS, Dept. CEP, 1300 Mermaid Ave., Chestnut Hill, Philadelphia, Pa.

When inquiring specify CEP5289 — see information request blank, pgs. 2-3



To Coordinate Many Motions

Five sets of three shafts each — all driven from one power source — by means of Diamond Roller Chains. Being identical on both sides they may be run over or under sprockets, center distances can be long, or short with speed ratios as maintained because there is no slip or creep. For catalog write DIAMOND CHAIN & MFG. CO., 411 Kentucky Avenue, Indianapolis, Indiana.

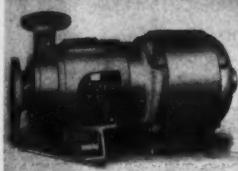
DIAMOND ROLLER CHAINS

When inquiring specify CEP5290 — see information request blank, pgs. 2-3



When inquiring specify CEP5291 — see information request blank, pgs. 2-3

A PUMP TO FIT Your NEED



The Motorpump — sturdy and compact.



The Class TRV — compact turbine-driven unit.

The Class CRV — for any type of driver.

The Ingersoll-Rand line of pumps covers practically all requirements. The compact Motorpump has capacities from 5 to 1800 gal per min. Other units from 2 to 100,000 gal per min. Let the I-R engineer give you complete details on units to meet your requirements.

9-173

Ingersoll-Rand

CAMERON PUMP DIVISION
BROADWAY NEW YORK, N. Y.

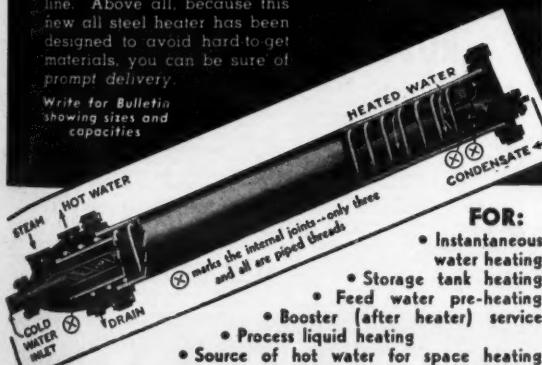
When inquiring specify CEP5292 — see information request blank, pgs. 2-3

Today's HOT WATER ANSWER!

TODAY'S call for speed places heavy demands on existing plant facilities. If lack of hot water keeps getting you in hot water, take a tip from hundreds of operating men and investigate the new Johnson all steel "Instant" Heater.

It's the simplest, quickest, and most economical way to heat water with steam. Like the original Johnson Copper Tube "Instant" Heater, after which it is patterned, it offers a sturdy construction that needs no reducers — hooks right up to your high pressure steam line. Above all, because this new all steel heater has been designed to avoid hard-to-get materials, you can be sure of prompt delivery.

Write for Bulletin showing sizes and capacities



Product of The Johnson Corporation

826 WOOD ST., THREE RIVERS, MICHIGAN

When inquiring specify CEP5293 — see information request blank, pgs. 2-3

NEW LITERATURE

Cold Plate Catalog and Data Sheets

Forty-page-loose-leaf style catalog on all types of cold plates including those for such industrial applications as locker, ice cream, beverage, plants, cold storage warehouses, low temperature test rooms and refrigerated trucks. Large, clear photos and complete specifications provide complete information on all this equipment. Of great practical value is the material contained in 24 data sheets. These give specific facts and figures on generally accepted standards for industrial refrigeration fixtures in connection with numerous products and processes. Tabulated data on refrigerants and tables on specific heat, freezing points of meats, fish, vegetables and fruits are included. This catalog titled, "Standard Prime Surface Cold Plates" is available upon request.

STANDARD-DICKERSON CORP., Dept. CEP, 46 Oliver St., Newark, N. J.

When inquiring specify CEP5294 — see information request blank, pgs. 2-3

Portable Electric Safety Hoists

Portable electric hoists complete with fifteen ft. conductor cable in sizes to lift loads up to 250, 500, 1000 and 2000 lbs. are illustrated and described in an eight-page-two-color catalog style bulletin. Action photos show actual installations for such applications as loading, welding, metal stamping, machinery manufacturing and repairing, foundries, bakeries and shipping rooms. Safety features such as two motor brakes and one hand control and others specified by the most rigid codes. Trolleys, chain containers, waterproof covers and jib and traveling bridge crane assemblies are also presented. Specifications are completely and conveniently listed and diagrams make it easy to check individual requirements. Bulletin 348 available upon request.

SHAW-BOX CRANE & HOIST DIVISION — Manning Maxwell & Moore, Inc., Dept. CEP, Muskegon, Mich.

When inquiring specify CEP5295 — see information request blank, pgs. 2-3

Non-Corrosive Equipment and Materials

Twelve-page-catalog-style bulletin illustrates and describes properties and applications of a wide line of non-corrosive chemical handling and processing equipment as well as a number of materials. Line includes stoneware tanks, pipes, fittings and stoneware lined equipment, acid-proof brick and cements, alloy and lead coated equipment, rubber and synthetic linings. Given particular emphasis are numerous types of equipment employing the protective qualities of coatings of "Tygon," a series of synthetics from which non-corrosive compounds can be formulated. Bulletin D available upon request.

U. S. STONEWARE CO., Dept. CEP, 60 East 42nd St., New York, N. Y.

When inquiring specify CEP5296 — see information request blank, pgs. 2-3

Binocular Eye-Loop

Six-page-folder describes and illustrates in great detail a new binocular eye-loop which magnifies an object approximately three times to needle point sharpness and provides third-dimension vision, true perception depth. In each lens is ground a prism which relieves eye strain. Fits over glasses. These and many other features are interestingly shown in a series of small snap-shot style photos. Folder sent on request.

EDROY MFG. CO., Dept. CEP, New York, N. Y.

When inquiring specify CEP5297 — see information request blank, pgs. 2-3

Heavy-Duty Bagging Scale for Chemical Packaging...



USES — For wide application in pre-determined weighing in range from 40 to 150 lbs.

FEATURES — Low weighing platform — 6 1/2" from floor. Reading Dial is 44" from floor with dial at 30 degrees angle for quick, easy reading. Dial tower may be turned in any direction to suit operator. Scale accurate to 1/4 oz. at full 150 lb. capacity.

DESCRIPTION — Scale is over and under, even balance type; rugged construction yet light in weight (130 lbs.) minus weights. Carrying handles on each side, make unit portable. Dimensions: 33 1/4" long, 21" wide, 46" overall height. Weighing platform 12" x 17" with sack rest.

Ask for the latest descriptive literature for full details — Write today!

THE EXACT WEIGHT SCALE CO.

31 W. Fifth Ave.

Columbus, Ohio

There is no substitute for Exact Weight

When inquiring specify CEP5298 — see information request blank, pgs. 2-3

THE LONG-LIFE COMBINATION PROMAL CHAINS AND >FLINT-RIM- SPROCKET WHEELS



Long after ordinary cast ferrous chain completes its normal span of service, a Promal chain usually works on and on, even though subject to adverse conditions.

Promal chains are tough under shock and strain; they are hard in the face of abrasion; they have great strength in proportion to weight and bulk.

Flint-Rim Sprocket Wheels resist abrasion and will last several times as long as iron sprocket wheels. They have fully demonstrated that they are the most durable and satisfactory cast type of tooth sprocket wheels.

For best results use them both in combination on your elevators, conveyors and slow speed drives.

LINK-BELT CHAINS AND SPROCKETS

For Conveying and Mechanical Power Transmission

When inquiring specify CEP5299 — see information request blank, pgs. 2-3

The Smaller Operations, Too, Need LINTERN-AIRE CONDITIONERS



★ Any crane exposed to excessively high temperatures and/or waste gases, fumes and smoke can be equipped with a Lintern-Aire Conditioner to advantage. This complete air conditioning eliminates all gas fumes, including harmful dust, and tempers the air to 90° in summer and 70° in winter.

There are many spots where Lintern-Aire Conditioners are essential to health protection such as mold yards, electric furnaces, slab yards, coil storage, ingot mold dipping, open hearth, press shops, steel foundries, brass foundries, copper smelting plants and forge shops.

Standard models with interchangeable parts, supplied complete with electric and temperature control, meet all mill and foundry requirements. We have successfully substituted less essential materials for critical materials (e.g., copper with galvanized steel) without lessening efficiency. All engineering, installing and checking under competent factory supervision.

THE LINTERN CORPORATION
56 Lincoln Avenue

Berea, Ohio

When inquiring specify CEP5300 — see information request blank, pgs. 2-3

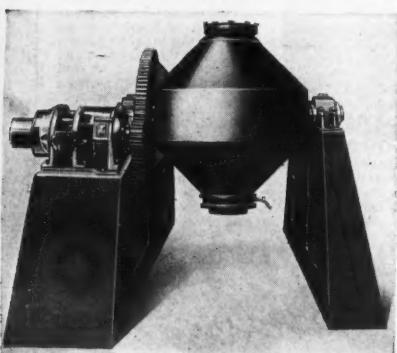


Abbe-Lanart Fluid Mixer for normal, vacuum or pressure operation, heating or cooling. Capacities — 1 to 350 gals. — Fastest dispersion.

You Get
More
Output
with
ABBE'
MIXERS
FASTER
and
BETTER
Write for
Catalogs
ABBE'
Engineering
Company

40 Church St.
New York, N. Y.

Double Conical Dry
Blender for chemicals,
plastics, minerals, etc.
Capacities — 1 to 250
cu. ft.



When inquiring specify CEP5301 — see information request blank, pgs. 2-3

NEW LITERATURE

Manganese Steel for Mill and Pulverizer Parts

Manganese steel in its many uses for crusher, grinding mill and pulverizer parts is given the most comprehensive treatment in a 24-page-and-cover bulletin. Properties and specifications are discussed at length in first chapter. Following sections, each containing a great variety of photos of all types of parts deal with such subjects as: Jaw Crusher Parts, Roll Crusher Parts, (including segments, rolls and shells), Gyratory and Cone Crusher Parts, Grinding Mill Parts, Pulverizer Hammers. Additional text provides actual performance data of various parts and a question and answers section covering the nature, history, development and applications of manganese steel. Bulletin 642-C is available upon request.

AMERICAN MANGANESE STEEL DIV., Dept. CEP, 389 East 14th St., Chicago Heights, Ill.

When inquiring specify CEP5302 — see information request blank, pgs. 2-3

Ventilating Blacked-out Buildings

New ventilating problems and requirements resulting from blacking out of windows and other light sources, have prompted the development of new ventilating equipment accessories which are described in a four page bulletin. To show the ease and economy with which this equipment is installed an actual case history of a west coast factory is cited. The units referred to are roof ventilators with self-cooled motors which are equipped with blackout hoods which are fabricated on the job. Painted inside and out they prevent light penetration without air obstruction. Also described is a dark room ventilator that is well adapted to blackout ventilation of laboratories and a filter type window ventilator also suited for such service. Bulletin 304 available on request.

ILG ELECTRIC VENTILATING CO., Dept. CEP, 2850 No. Crawford Ave., Chicago, Ill.

When inquiring specify CEP5303 — see information request blank, pgs. 2-3

Engineering Catalog on Brass, Bronze, Iron Alloys

Data on thirty-two non-ferrous and ferrous alloys which are most generally used in industrial and engineering applications is given in a recently issued forty-page catalog. Composition, applications and physical properties of each alloy are given in tabulated form. Illustrations show a variety of products made of these alloys. The book lists the brass and iron products of the organization, describes the effects of various elements on iron and discusses terms used in materials testing. Among the most interesting of the alloys is P-M-G metal, a silicate bronze made without tin. Catalog is available upon request.

CRAMP BRASS & IRON FOUNDRIES, Division of the Baldwin Locomotive Works, Dept. CEP, Philadelphia, Pa.

When inquiring specify CEP5304 — see information request blank, pgs. 2-3

Steel Office and Shop Equipment

Loose-leaf-catalog of forty-eight pages in heavy, attractive cover illustrates and describes a diversified line of steel chairs, stools, filing cabinets, desks, mailing tables, benches, desks, tool stands and trucks. Complete specifications and prices are given in convenient tabulated form. Catalog is number G.

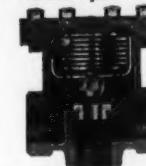
ANGLE STEEL STOOL CO., Dept. CEP, Plainwell, Mich.

When inquiring specify CEP5305 — see information request blank, pgs. 2-3

★ ★ ★ ★ ★ 5 Features that have made NICHOLSON TRAPS Famous!

1. NO FREEZE-UPS

Nicholson Industrial Steam Traps are of thermostatic bellows type, drain completely when cold, prevent bothersome freeze-ups.



Type A

2. NO AIR-BINDING

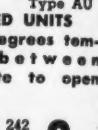
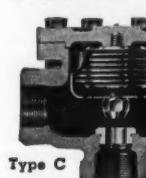
All types discharge air just as efficiently as water. Work on pressures up to 300 lb.



Type B

3. NO DRIBBLING

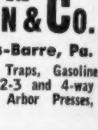
Closes immediately when steam contacts bellows.



Type C

4. NO ADJUSTMENT NEEDED

Same adjustment used for any pressure from vacuum up to the maximum allowable with construction used.



Type AU

5. NO WATER-LOGGED UNITS

Requires but a few degrees temperature differential between steam and condensate to open valve.

W. H. NICHOLSON & CO.
181 Oregon St., Wilkes-Barre, Pa.
Piston and Weight Operated Steam Traps, Compressed Air Traps, Gasoline Trans, Steel and Stainless Steel Floats, Flexible Couplings, 2-3 and 4-way Valves, Compression Shaft Couplings, Expanding Mandrels, Arbor Presses, Steam Eliminators and Separators.

When inquiring specify CEP5306 — see information request blank, pgs. 2-3



Some Day — "RUST" will be a Curiosity!

In the Process Industries

In many modern plants, it is already "extinct." In others, only wartime restrictions of stainless steels have limited the use of corrosion programs.

One outstanding achievement in steel work for 10 years has found increasing acceptance in the Process Industries, is IngClad Stainless-Clad Steel. Here is a material whose contact side gives the same protection afforded by solid stainless metal. Yet the cost is much lower.

Today our entire production of both IngClad Stainless-Clad Sheets and Plates, and IngClad Solid Stainless Sheets is devoted to essential war needs. If your operations enable you to obtain the necessary priority rating, write us.

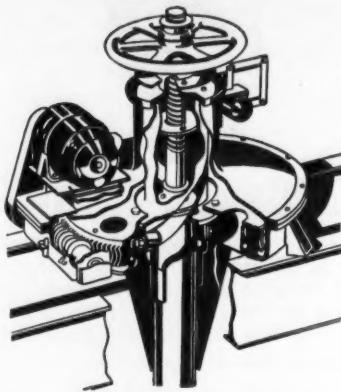
INGERSOLL STEEL & DISC DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago, Illinois
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

INGACLAD
STAINLESS-CLAD STEEL

When inquiring specify CEP5307 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

"AUTO-RAISE" THICKENER



The Thickener Mechanism That Lifts The Scrapers Away From Obstructions Or Extra Heavy Load In Tank Bottom.

Write For Bulletin 31-C

HARDINGE

COMPANY, INCORPORATED - YORK, PENNSYLVANIA
NEW YORK, CHICAGO, SAN FRANCISCO, TORONTO

When inquiring specify CEP5308 — see information request blank, pgs. 2-3

SWENSON TOP FEED FILTER

— a combined filter and dryer



With high capacity and high thermal efficiency under automatic control, the operating cost of these units is remarkably low. Output of 100 to 900 lbs. per hour per sq. ft. of filter area. Send for Bulletin F-101 for complete description. Swenson Evaporator Co. (Div. of Whiting Corp.), 15667 Lathrop Ave., Harvey, Ill.

SWENSON

EVAPORATORS • FILTERS • CRYSTALLIZERS

NEW LITERATURE

How to Organize a Community Salvage Drive

Methods used by an industrial concern in organizing a war-use salvage campaign in its community are fully described in an attractive magazine style brochure, 20-pages-and-cover and profusely illustrated. Pictures and text trace the progress of the campaign showing enlistment of cooperation of public officials, use of newspaper, radio, soundwagon, poster and billboard publicity media, canvassing of homes and places of business and entertainment at the Victory Scrap Yard. Over 46 lbs. of scrap per capita for the town's 14,582 population amounted to collection of a total of 616,065 lbs. Booklet titled, "Salvage," is available upon request.

LUKENS STEEL CO., Dept. CEP, Coatesville, Pa.

When inquiring specify CEP5309 — see information request blank, pgs. 2-3

Rotary Power and Hand Pumps

A new general catalog of twenty-four pages, inclosed in a striking cover contains detailed information and numerous illustrations regarding a complete line of rotary pumps embracing five basic units, which with proper accessories meet practically all types of rotary pump requirements. The five units are power pumps (industrial), power pumps (marine), Sanitary pumps, trucks pumps and hand pumps. Photos of units in actual use in various industries and related performance data are featured. Catalog, "Blackmer Rotary Pumps," available upon request.

BLACKMER PUMP CO., Dept. CEP, 1845 Century Ave., S. W. Grand Rapids, Mich.

When inquiring specify CEP5310 — see information request blank, pgs. 2-3

Instruction Charts on Conservation of Welding Electrodes

An 18-page-and-cover bulletin gives practical and detailed instruction on numerous points to be observed in conserving arc welding electrodes. The important directions are summarized in a series of charts and the six pages containing them are printed on an uncut strip which can be easily removed from the bound bulletin and placed on the shop wall for all to see. Chart subjects are (1) Wasteful practice of bending electrodes, (2) Discarding stub ends before electrode has been fully utilized, (3) Poor Fit-up, insidious waster, (4) Making legs of fillet welds equal, (5) Making Face of fillet welds flat, (6) Keeping welding electrodes dry. This highly instructive material is available upon request for Bulletin 852.

AIR REDUCTION SALES CO., Dept. CEP, 60 East 42nd St., New York, N. Y.

When inquiring specify CEP5311 — see information request blank, pgs. 2-3

Steel Stamps & Type Holders

Sixteen-page-and-cover catalog illustrates and describes a complete line of steel stamps, including hammers especially designed for this service. Stamps include letter and figure bevel stamps for general industrial stamping, for light marking on soft metal, wood, fibre, plastics, special trade mark stamps, and models for stamping concave and convex surfaces. Stamps for code and symbol marking are also shown. Numerous tables list sizes and type faces are given in chart form. This is supplement A to catalog 46 and is available upon request.

JAMES H. MATTHEWS & CO., Dept. CEP, Pittsburgh, Pa.

When inquiring specify CEP5312 — see information request blank, pgs. 2-3

Higher Vacuum REDUCES PROCESSING COSTS

The use of higher vacuum in the chemical, food, electrical and other industries, for drying, evaporating, impregnating, etc.

- Lowers Operating Temperatures
- Protects Heat-Sensitive Materials
- Reduces Oxidation
- Minimizes Explosion Hazards
- Makes use of Waste Steam or other Low-Cost Heat
- Reduces Processing Time

To obtain higher vacuum economically, use Stokes High Vacuum Pumps. They are rugged, compact, simple, rotary type pumps with only three internal moving parts, built for hard, continuous service.

They draw and maintain, continuously, vacuum within a fraction of a millimeter . . . frequently outperform pumps of twice their rated capacity. Consult with Stokes engineers about high vacuum processing methods and advantages. Write for handbook and combined catalog . . . a reference work on vacuum methods, with graphs, charts and other valuable information.

F. J. STOKES MACHINE COMPANY
5974 Tabor Road, Olney P. O.
Philadelphia, Pa.



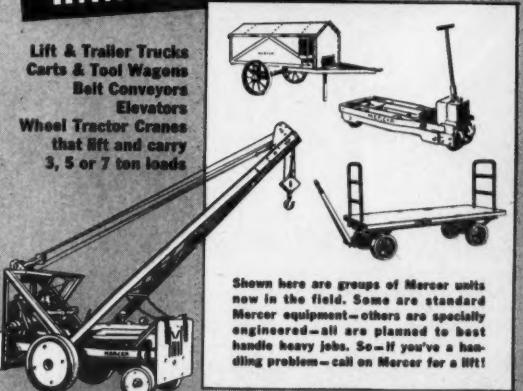
When inquiring specify CEP5313 — see information request blank, pgs. 2-3

MERCER

"THE NAME THAT CARRIES WEIGHT"

Industrial MATERIAL HANDLING EQUIPMENT

Lift & Trailer Trucks
Carts & Tool Wagons
Belt Conveyors
Elevators
Wheel Tractor Cranes
that lift and carry
3, 5 or 7 ton loads



Shown here are groups of Mercer units now in the field. Some are standard Mercer equipment—others are specially engineered—all are planned to best handle heavy jobs. So—if you've a handling problem—call on Mercer for a lift!

MERCER ENGINEERING WORKS, INC.

Works: CLINTON (ALLWOOD), N. J. Sales Office: 30 CHURCH STREET, NEW YORK
Export Office: 80 Broad St., New York

When inquiring specify CEP5314 — see information request blank, pgs. 2-3

GLOBE VALVES TANK VALVES
LEVER THROTTLE GATE VALVES
CHECK VALVES SCREWED FITTINGS
GATE VALVES FLANGED FITTINGS
Y VALVES GAUGE GLASS FITTINGS

...contamination, corrosion and stain resistant

This ALOYCO Number 111, Stainless Steel Gate Valve is helping to aid the Victory Program in the many new applications created by the demands for war production. It is made in sizes $\frac{1}{2}$ " to 12" and available in Chrome Nickel 18-8S, 18-8SMo, Durimet, Worthite and ALOYCO 20.

By reducing work stoppage due to the corrosive action of acids, salts and gases, ALOYCO Stainless and Corrosion Resisting Valves and Fittings are of vital importance to Chemical and Process Industries faced with today's unprecedented demands.

Materials used in the manufacture of ALOYCO products are rigidly controlled to meet the most exacting specifications.

ALLOY STEEL PRODUCTS COMPANY, INC.
1300 West Elizabeth Avenue Linden, New Jersey



STAINLESS STEEL VALVES AND FITTINGS

When inquiring specify CEP5315 — see information request blank, pgs. 2-3



I may be only a trade-mark but I am very proud of my job representing the nation's outstanding sealing devices for power equipment.

DURAMETALLIC twisted, flexible, metallic packing
DURA PLASTIC improved, lubricated plastic packing
DURA SEAL mechanical seal that rotates with the shaft.
Free engineering service on your packing problems.

DURAMETALLIC CORPORATION
KALAMAZOO MICHIGAN

When inquiring specify CEP5316 — see information request blank, pgs. 2-3

NEW LITERATURE

Sub-Zero Refrigerating Machines

Refrigeration plates and equipment for industrial use are interestingly described in an attractive bulletin of 28 pages, spiral-plastic binding and substantial colored cover. Included in the products shown are several sub-zero testing machines of application in the production of tools, gauges, instruments. Especially emphasized is their service in shrinking metal parts, aging steel to prevent growth, testing and storing materials and cooling welder electrode tips. A chapter is also devoted to plates for hold-over truck refrigeration. Bulletin M-42 available on request.

KOLD HOLD MFG. CO., Dept. CEP, Lansing, Mich.

When inquiring specify CEP5317 — see information request blank, pgs. 2-3

Ladle Lining Material

Folder on ladle lining material describes the development of the product, its properties, application and the manner in which it meets the numerous requirements of an efficient lining. The procedure followed in actual ladle lining jobs employing this material is described in detail and photos of the ladles after being subjected to heavy duty are reproduced. Folder available on request. NOCK FIRE BRICK CO., Dept. CEP, 1243 East 55th St., Cleveland, Ohio.

When inquiring specify CEP5318 — see information request blank, pgs. 2-3

Automatic Powered Direct Heaters

Powered heaters that may be fired by coal, oil or gas are described in a four-page-two-colored bulletin, 8½ x 11 ins. Design and direct heating principle employed for rapid and efficient transmission of heat are explained. Construction features such as copper bearing steel boiler plates and one piece electrically welded, leak-proof design are illustrated. The automatic gas and oil burner units are also pictured. Sizes and ratings for various types of buildings are included.

JACKSON & CHURCH CO., Dept. CEP, Saginaw, Mich.

When inquiring specify CEP5319 — see information request blank, pgs. 2-3

Vibratory Cleaners for Boiler Tubes

A concise, practical discussion of vibratory methods of removing scale from boiler tubes is presented in a small two-color folder. Basic principles and advantages of this method are convincingly presented and two models of vibrating cleaners, one for fire tubes and another for water tubes are illustrated. Folder is available upon request.

BRUNT EQUIPMENT CO., Dept. CEP, 58 So. Division St., Buffalo, N. Y.

When inquiring specify CEP5320 — see information request blank, pgs. 2-3

Truck Mounted Crane for Handling Materials

Six-page-illustrated-booklet describes a new truck mounted crane that is highly mobile and versatile. Can be used with hook block, clamshell bucket or a dragline bucket and adaptable to a variety of operations including material handling and steel erection. 30, 40 and 50 ft. booms, Diesel or gasoline. Booklet No. 1928 available upon request.

LINK-BELT CO., Dept. CEP, 307 South Michigan Ave., Chicago, Ill.

When inquiring specify CEP5321 — see information request blank, pgs. 2-3



SPRACO Center-jet NOZZLES

deliver a solid full cone spray of uniform distribution over the area covered. They are particularly suited to processes involving quenching, cooling, washing, and spraying. We can furnish these nozzles in brass, bronze, stainless steel, or any other machinable metal specified, in a wide range of sizes and capacities.

Other types which we manufacture include nozzles to produce hollow cone sprays and flat fan-shaped sprays, together with two fluid nozzles for mixing two fluids, or a fluid and a gas. For complete descriptions and performance data write for NOZZLE CATALOG.



SPRAY ENGINEERING CO.

113 CENTRAL ST., SOMERVILLE, MASS.

When inquiring specify CEP5322 — see information request blank, pgs. 2-3



MAILED PROMPTLY, WITHOUT
CHARGE, ON REQUEST
Also valuable information on
Available Manufacturing Facilities

MADE BY THE MANUFACTURERS OF
INDUSTRY'S FINEST WIRE CLOTH
Buffalo WIRE WORKS CO., INC.
ESTABLISHED 1869 BY J. SCHIEFFER, JR.
419 TERRACE BUFFALO, N. Y.

When inquiring specify CEP5323 — see information request blank, pgs. 2-3

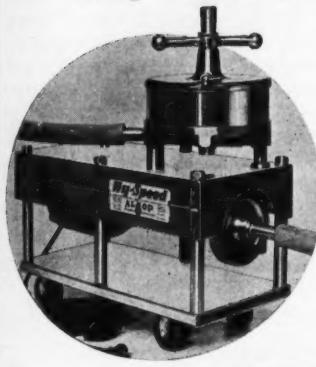
Alsop "Hy-Speed" Mixers

Whatever you mix: either liquids or semi-liquids; we have the correct mixer for the job. In portable units, fixed position, or side entering to handle any volume, with original and practical features developed during 25 years experience.

We can furnish mixers only or complete mixing units.



Alsop "Sealed Disc" Filters



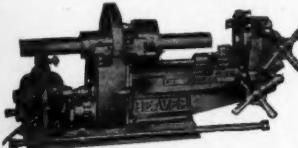
These filters will completely remove all impurities in any liquid, at low cost. Portable units compactly built, or for pipe line connection. Handles unusual volume for its size. Write for Cat. 941.

Alsop
Engineering
Corp.

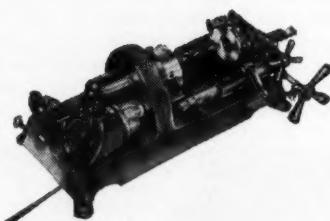
8 Alsop Square
Middletown Conn.

When inquiring specify CEP5324 — see information request blank, pgs. 2-3

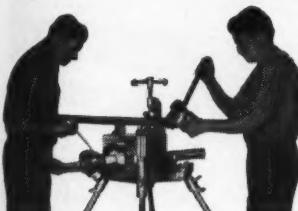
The A-B-C of Pipe and Bolt Machines



Beaver Model-A
A high-speed heavy-duty deluxe Pipe and Bolt Machine. Range $\frac{1}{8}$ to 2-inch — up to 12-inch with geared tool and drive shaft. Bolts, $\frac{1}{4}$ to 2-inch. Wt. 415 lbs. Ask for Bulletin-A.



Beaver Model-B
A compact utility Pipe and Bolt Machine combining many features of Model-A with the easy portability of Model-C. Range $\frac{1}{8}$ to 2-inch — up to 8-inch with drive shaft and geared tools. Bolts up to $1\frac{1}{2}$ inch. Wt. 280 lbs. Ask for Bulletin-B.



Beaver Model-C
A sturdy little Power Unit. Converts Hand Pipe Tools into Power Tools from $\frac{1}{8}$ to 8-inches. Threads 8-inch in 6 minutes. Threads bolts up to $1\frac{1}{2}$ -inch. Equipped with automatic chuck wrench ejector—a safety feature. Two men can use it at the same time without interference. Easily portable—weights about 150 lbs. Write for Bulletin-C.

BEAVER PIPE TOOLS

WARREN, OHIO

942 REVIEW AVE.

When inquiring specify CEP5325 — see information request blank, pgs. 2-3

NEW LITERATURE

Steel Flooring and Steps

Steel flooring in a variety of styles to meet specialized requirements is described and illustrated in an attractive two-color-four-page bulletin. Outstanding features of design that are common to all flooring in the line include non-slip surface and no tendency to permit collection of snow, ice or dirt. Among other advantages that are pointed out are exceptionally good provision for light and ventilation. Methods of installation, details of construction and a tabulation of safe loads for various sizes, lengths and weights of this flooring are included. Available upon request.

KERLOW STEEL FLOORING CO., 21 Mallory Ave., Dept. CEP, Jersey City, N. Y.

When inquiring specify CEP5326 — see information request blank, pgs. 2-3

Carbon & Graphite Corrosion Resistant Pipe

Catalog-section of eight pages is devoted to carbon and graphite corrosion resistant pipes, tubes, fittings, valves and heat exchangers. Physical properties are described in detail and photos and drawings augment the specification listings. Materials are resistant to a variety of reagents and tabulation of over one hundred of them shows specified concentration and temperature at which they can be handled. Catalog section M-8800A available upon request.

NATIONAL CARBON CO., Dept. CEP, Box 6087, Cleveland, Ohio.

When inquiring specify CEP5327 — see information request blank, pgs. 2-3

Acid Proof Stoneware Laboratory Equipment

Twelve-page-and-cover catalog provides complete purchasing information regarding extensive line of acid proof chemical stoneware laboratory equipment. Illustrated and described in detail are one piece molded sinks, acid waste pipe and fittings, ventilating pipes, sink outlets, sumps, waste and distilled water jars. Material is ceramic, entirely corrosion-proof, all the way through. Specification tables and directions for making joints are included. Catalog available upon request.

MAURICE A. KNIGHT, Dept. CEP, Akron, Ohio.

When inquiring specify CEP5328 — see information request blank, pgs. 2-3

Electric Platform Trucks

Four page-two-colored-bulletin gives special emphasis to nine outstanding features of new electric platform truck including heavy duty, one piece, totally inclosed axle, fully ventilated battery box, arc welded strongly braced frame. Large photo as well as diagrammatic drawings augment complete tabulation of specifications. In addition a large capacity six wheel model is also illustrated. Bulletin No. 1263 available upon request.

ATLAS CAR & MFG. CO., Dept. CEP, Cleveland, Ohio.

When inquiring specify CEP5329 — see information request blank, pgs. 2-3

Specialized Eye-Protection Devices

A small eight-page folder with each page cut to a different size to provide for a convenient indexing imprint provides interesting information and illustrations in connection with numerous types of special industrial goggles. Included are models for chemical workers, welders, grinders and adjustable eye-shields in several types. Available on request.

PULMOSAM SAFETY EQUIPMENT CORP., Dept. CEP, 176 Johnson St., Brooklyn, N. Y.

When inquiring specify CEP5330 — see information request blank, pgs. 2-3

EQUIPMENT FOR THE CHEMICAL INDUSTRIES

Made by ARTISAN from any metal

Autoclaves

With or without agitators
Steam, Dowtherm, Electric or Gas Heated

Condensers and Heat Exchangers

Single Pass and Multi-pass

Distillation Equipment

Continuous Rectifying
Batch Rectifying
Steam Distillation
Plain Evaporative

Evaporators

Horizontal Tube
Vertical Tube
Basket Type
Forced Circulation

Jacketed Kettles

Hemispherical or Standard
Dished Heads

Pipe, Pipe Coils, and Bends

Large fabricated pipe, particularly copper, monel, and stainless steel. All types of processing piping.

Pipe coils—in any metal — helical, zigzag, pancake, from all sizes of pipe and tubing

Reactors

Plain, jacketed, or with coils. Agitated—horseshoe, turbine, or paddle-blade type

Tanks

All types and sizes

ARTISAN METAL PRODUCTS INC.

12 SULLIVAN SQUARE

BOSTON, MASS.

When inquiring specify CEP5331 — see information request blank, pgs. 2-3



DUST is too important to be "on the loose." It may damage machinery by causing wear in bearings and other working parts; it may be injurious; it may be explosive; it may be valuable, it may spoil material by smudging, scratching, etc.; it may reflect in many other costly and harmful ways such as: poor workmanship, poor lighting, increased cleaning, painting, etc.

To obtain complete dust protection in your plant make sure that each dust creating operation is properly hooded or exhausted, that the piping layout is designed correctly and that the dust collector is giving you the very highest efficiency.

Our dust control engineers will be glad to help you on any of these problems. Write us about them today — and also ask for our latest dust control literature.

AMERICAN FOUNDRY EQUIPMENT CO.
573 S. Bryn Mawr St., Mishawaka,
Ind.

AMERICAN
DUST COLLECTORS
HIGH EFFICIENCY

When inquiring specify CEP5332 — see information request blank, pgs. 2-3



No More Damage from Condensation or Sweating Pipes, Tanks, Walls, Ceilings and Air Ducts



A SURE CURE

This sensational plastic cork coating is easily applied with brush, trowel or spray to metal, concrete, brick, wood, plaster or composition surfaces. Insulates and prolongs life of pipe and other metal by preventing rust and corrosion.

Produces a permanent, stucco-like finish that requires no maintenance. Can be painted any color. A gallon can covers about 30 feet and 1" O.D. pipe. Comes in 1, 5 and 55 gallon drums.

Order from your supply house or write for circular.

J. W. MORTELL CO.

530 Burch Street Kankakee, Ill.

When inquiring specify CEP5333 — see information request blank, pgs. 2-3



NEVILLE

We are now in production...

Dibutyl Phthalate

★ We solicit your inquiries

R-I

THE NEVILLE COMPANY

PITTSBURGH • PA.

Chemicals for the Nation's War Effort

BENZOL • TOLUOL • XYLOL • TOLUOL-SUBSTITUTES • CRUDE COAL-TAR SOLVENTS
HI-FLASH SOLVENTS • PAINT AND VARNISH REMOVERS • COUMARONE-INDENE RESINS
RUBBER COMPOUNDING MATERIALS • WIRE ENAMEL THINNERS • DIBUTYL PHTHALATE
TAR PAINTS • RECLAMING, PLASTICIZING, NEUTRAL, CREOSOTE, SHINGLE STAIN OILS

When inquiring specify CEP5334 — see information request blank, pgs. 2-3

MATERIALS . . .

Substitute Rubberizing Material Applied by Conventional Methods

Equals and has advantages over natural product; process and materials now available to manufacturers



WATER BAG . . . one of many items processed by new method

sary, no new equipment or mechanical adjustments are required and regular workers can handle operations without additional training.



RUBBERIZING SUBSTITUTE . . . lends itself well to calendering

compounding quickly and easily since it does not require a "breakdown" like rubber. If the plastic is to be made into cement for spreading, it is then taken from the mill and placed in churning with a solvent. If it is to be calendered it is taken off in convenient sheets and stacked until used. Before calendering these sheets are warmed up in the usual manner on a mill and fed into the calender where they are joined to the cloth in the same manner

as rubber. Curing can be performed then or after fabric has been converted into articles. Curing is at the same temperature at which rubberized articles are vulcanized. The change during curing is similar to that which takes place in natural rubber during vulcanization.

Performance — Raincoat material made by this method did not crack at -60 degrees C., nor adhere to itself at 120 degrees C. In army raincoats this process saves more than 1 2/3 lbs. of crude rubber per coat. Lighter fabric can be used reducing the average weight two pounds and providing a welcome reduction in the soldiers' packs.

Description — This new substitute is a plastic already familiar to the automotive and glass industries as the tough, resilient interlayer in safety glass. Its trade name is Saflex and it is one of the group of synthetic resins known as vinyl acetals. By the process perfected Saflex can be plasticized and compounded that it can equal or even surpass the performance of natural rubber when applied to fabrics by conventional "rubberizing" methods. The process transforms Saflex from a thermo-plastic to a thermosetting material with markedly increased resistance to solvents and greatly decreased water absorption. Developed by the Hodgman Rubber Co., Framingham, Mass. in conjunction with research chemists of Monsanto Chemical Co. process is known as the Hodgman process. Both process and materials are available to manufacturers. Information about Saflex sent on request.

MONSANTO CHEMICAL CO., Dept. CEP, St. Louis, Mo.

When inquiring specify CEP5335 — see information request blank, pgs. 2-3

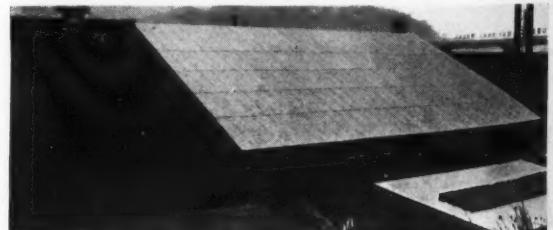
Plastic Coating Protects Metals Against Weather Hazards

Simplified method replaces galvanizing; product adaptable to varying climatic conditions

Uses — Material is used in simple bonding process on prefabricated or preformed metals to weatherproof them.

Features — Modifying the product before application provides the special climatic or weather resisting characteristics required in specific cases, producing a coating that will not become brittle and chip or melt and flow at great extremes of temperature. Helps to conserve zinc.

Description — Product is a pitch of improved plastic



PLASTIC PITCH COATING . . . protects steel roof

character designed to replace galvanizing and rolled bituminous applications. Metal is not shaped or formed after material is applied, avoiding rupture in coating bond or strains in the metal. Product is identified as "Plastic-pitch."

COATED PRODUCTS CORP., Dept. CEP, Verona, Pa.

When inquiring specify CEP5336 — see information request blank, pgs. 2-3

MATERIALS

Booklet on the Nitroparaffins

The Nitroparaffins, their properties, reactions and uses are given the most comprehensive treatment in a handsomely printed, magazine style booklet illustrated with numerous photos showing equipment and methods used in the production of these compounds. Some specific solvent uses of these nitroparaffins are discussed in detail: cellulose acetate, cellulose triacetate, cellulose acetobutyrate, vinyl resins, cellulose nitrate, removers for synthetic finishes, oil and spirit soluble dyes. Substances which are either soluble or insoluble in 1 and 2 nitro-prane (the other two commercially produced nitroparaffins being nitromethane and nitroethane) are tabulated. In both cases they are classified under waxes, natural gums and resins, tars and pitches, coating materials, organic chemicals, oils and fats, coating materials. Synthesis with the nitroparaffins is also discussed. Typical of the products which are now made from nitroparaffins and their derivatives are pharmaceuticals, dyestuffs, insecticides, rubber chemicals, photographic developers, textile chemicals, and to improve such products as shoe polishes, cosmetic creams and lotions, industrial emulsions. Chapter subjects include Nitrohydroxy derivatives, Aminohydroxy derivatives, Hydroxylammonium salts, chloronitroparaffins. Available upon request.

COMMERCIAL SOLVENTS CORP., Dept. CEP, Terre Haute, Ind.

When inquiring specify CEP5337 — see information request blank, pgs. 2-3

Manual on Synthetic Organic Chemicals

100 page-and-cover reference manual of industrial aliphatic chemistry contains in condensed form description of the uses, properties and specifications of synthetic organic chemicals for industrial use. Included in the subjects discussed are alcohols, glycols, ethers and oxides, glycol ethers, esters, organic acids, chlorinated compounds, amines, synthetic resins and activated carbons. Numerous tables of physical properties listing products in order of specific gravity, boiling points, vapor pressure and absolute viscosity and a product and application index complete the volume. This manual titled, "Synthetic Organic Chemicals" is available upon request.

CARBIDE & CARBON CHEMICALS CORP., Dept. CEP, 30 East 42nd St., New York, N. Y.

When inquiring specify CEP5338 — see information request blank, pgs. 2-3

Dark Colored Camouflage Paints Reflect Heat Producing Infra-Red Rays

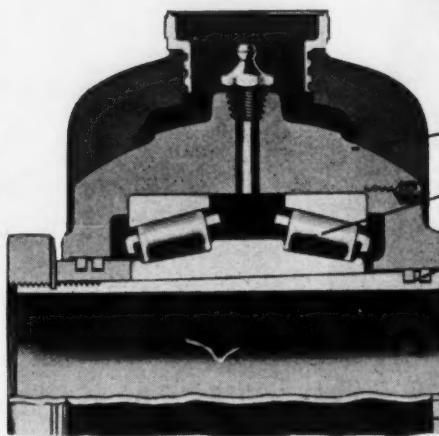
Magazine-style-booklet, 18-pages-and-cover gives a novel and comprehensive presentation of new industrial camouflage and blackout paints to meet the requirements imposed by newest aerial warfare methods. The manner in which these products provide dark, (in some cases black) low visibility, no sheen colors with the property of reflecting heat producing infra-red rays is explained. Highlighting the text are diagrams, a spectrum color scale, chart of the basic "Infray" colors and pictures illustrating modern camouflage technique. An interesting reference is the extent to which these paints resist detection even by infra-red aerial photography which clearly reveals surfaces covered with regular paint. Booklet titled "Target for Tomorrow," available on request.

ARCO CO., Dept. CEP, 7301 Bessemer Ave., Cleveland, Ohio.

When inquiring specify CEP5339 — see information request blank, pgs. 2-3

They Can Take a Beating *for Victory!*

HIGH SERVICE
HEAVY DUTY
SHOCK LOADS



- 1. Full ball and socket self alignment.
- 2. Timken tapered roller bearings give full radial and thrust capacity.
- 3. All metal automotive type piston ring seals keep grease in and dirt out.
- 4. Long split adapter sleeve distributes load over entire length of bearing — reduces pressure per square inch on shaft and eliminates peening action which causes rapid wear.
- 5. Rugged, well proportioned outer housing.

DODGE-TIMKEN SPECIAL DUTY BEARINGS



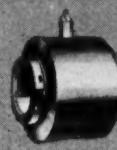
Dodge-Timken Special Duty Ball and Socket Pillow Block



Dodge-Timken Special Duty "S 1" Pillow Block



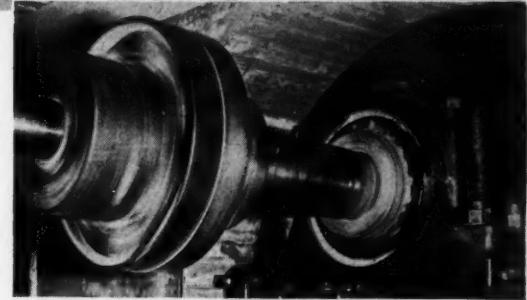
Dodge-Timken Special Duty "D" Unit Mount



Dodge-Timken Special Duty "S 1" Unit Mount



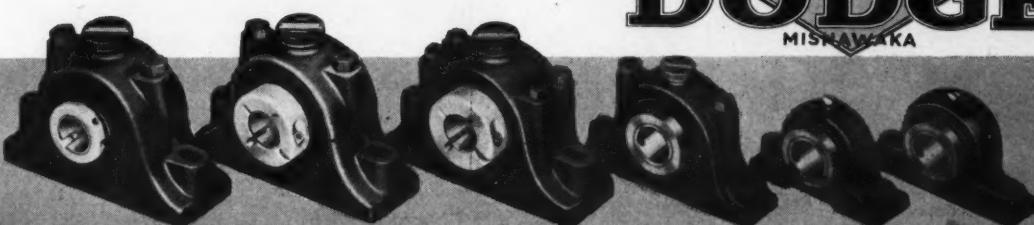
Dodge-Timken Special Duty "S 1" Unit Mount



Dodge-Timken Special Duty Pillow Blocks help modernize power transmission and solve increased production problems in an important North Carolina textile mill.

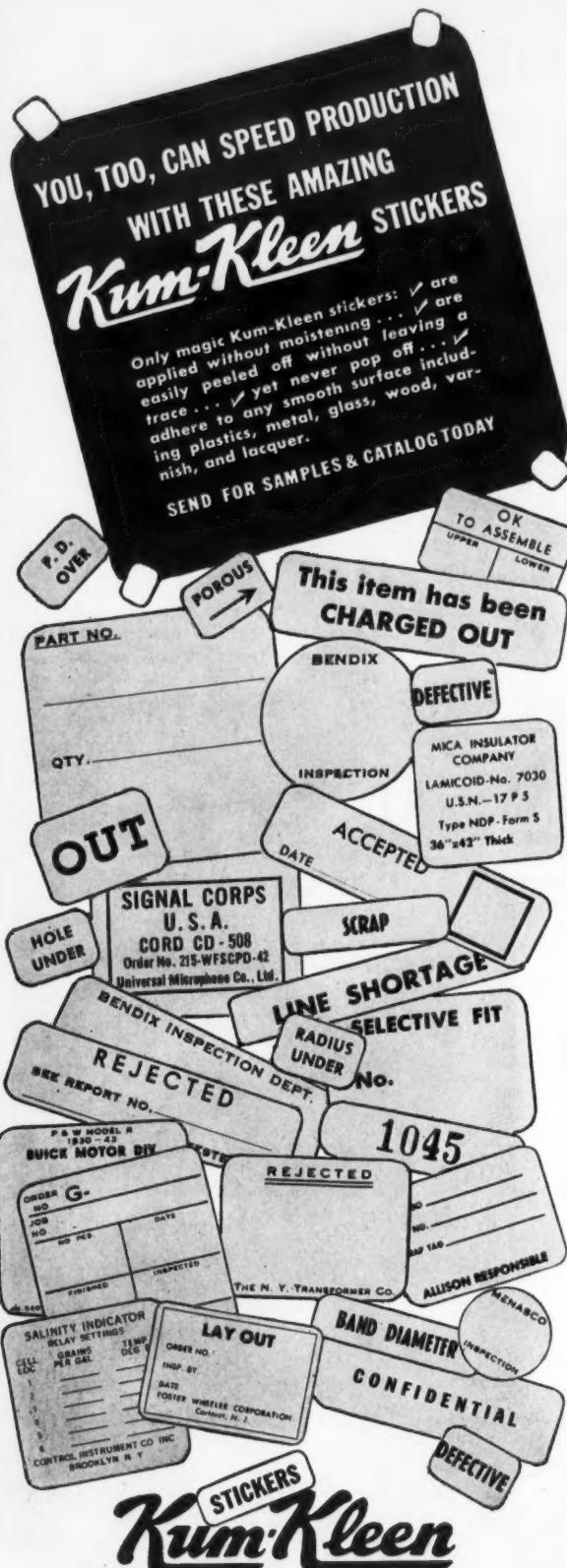
DODGE MANUFACTURING CORPORATION
MISHAWAKA, INDIANA, U. S. A.

DODGE
MISHAWAKA



DODGE ROLLING BEARINGS . . . The 30,000 Hour Line

When inquiring specify CEP5340 . . . see information request blank, pgs. 2-3



When inquiring specify CEP5341 — see information request blank, pgs. 2-3

MATERIALS . . .



EASY REMOVAL of coating by lifting edge and peeling

Transparent Protective Coating Can Be Removed and Used Again

Water-proof film quickly reduced to liquid; easily applied to metals and ceramics



PROTECTIVE COATING easily sprayed

polished surfaces such as flat sheets, molds, irregular shapes, dies and bearings.

Features — Material is completely transparent to permit visual inspection of the coated parts. Available in colors

it makes a convenient and reliable identification medium. **Performance** — Coatings when dried range from .001 to .0005 inches. One gallon when sprayed to a thickness of one mil, will cover approximately 250 square feet of surface. Drying time at 200 degrees F. is six to eight minutes.

Description — In application, the material is sprayed, brushed, dipped or roll coated. Coating is removed by merely lifting one edge with finger nail and peeling. Degree of adhesion to the part protected is controlled to eliminate the possibility of accidental or premature removal. After removal, the material is easily reduced to liquid form and used again, lowering costs to a minimum. Coating is known as "Protekton."

AULT & WIBORG, Dept. CEP, 75 Varick St., New York City.

When inquiring specify CEP5342 — see information request blank, pgs. 2-3

Synthetic Organic Coatings

Synthetic organic coatings, their properties and applications are described in a twenty-page — attractively covered booklet. The products concerned here are a group of phenol-formaldehyde thermo-setting plastics identified under the name "Heresite" and are modifications of the same basic synthetic resin. Value as a corrosion resistant coating in connection with processing equipment and machine parts is emphasized and an industrial test chart listing results of tests with various agents provides interesting data. Resistant and decorative colored enamels, a transparent molding compound and synthetic resins for use as plywood adhesives are also featured. Booklet titled, "Heresite — Finishes & Plastics," available upon request.

HERESITE & CHEMICAL CO., Dept. CEP, Manitowoc, Wis.

When inquiring specify CEP5343 — see information request blank, pgs. 2-3

Granules Stop Magnesium Fires

Large metal recovery after extinguishment, listed by Underwriters' Laboratories

Uses — For reducing magnesium fires in plants and reducing incident losses of metal. Also has application in extinguishment of incendiary magnesium bombs.

Features — Large percentage of metal recovered after fire is extinguished. Fumes given off disclose no hazardous concentrations of toxic gases.

Application — Applied to fire with ordinary shovel or direct from container without danger to operator.

Performance — Tests indicated that when 3 lbs. of magnesium alloy scrap were ignited and these granules applied to the burning mass, the fire was extinguished in five minutes and 2 lbs. 5 oz. of the metal recovered. The manufacturer states that control of magnesium fires with the granules is simple and effective, sealing the burning magnesium with an air-tight blanket, cutting off oxygen supply and stopping fire. Tests by Underwriters' Laboratories demonstrated that these granules are effective in extinguishing magnesium fires, that they can be applied without danger to operator, that objectionable smoke or soot does not result.

Description — Granules remain free-flowing up to 175 degrees of temperature and do not absorb an appreciable amount of moisture under normal atmospheric conditions. Produced of non-critical materials of which supply is ample. Product identified as MX Granules.

PHILIP CAREY MFG. CO., Dept. CEP, Lockland, Cincinnati, Ohio.

When inquiring specify CEP5344 — see information request blank, pgs. 2-3

Asphalt Planks Meet Requirements for Heavy Duty Factory Floors

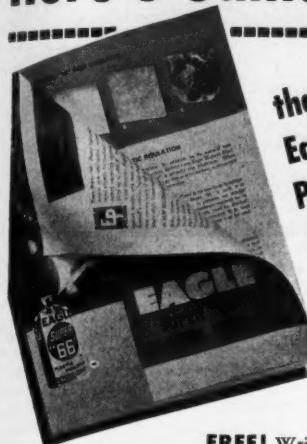
Designed to withstand unusually hard wear easily installed

Uses — As a factory flooring that will meet the stringent requirements imposed by loading and trucking operations, vibrating machinery and where acid-resisting, waterproof and noiseless properties are essential.

Features — Exceptional durability. Absorbs vibration. Contributes to lighter weight, yet stronger construction as it requires no heavy supporting structure. Easily installed with practically no interruption to plant operation.

Application — Concrete: floor must be dry, swept free

Here's Camera-Proof



that
Eagle Super "66"
Plastic Insulation
gives
double protection
against rust!

FREE! Write today for new catalog sheets on Eagle Super "66" Plastic Insulation. They contain picture evidence of its sensational non-corrosive and rust-inhibitive properties. Also facts explaining why its "springy ball" structure assures high coverage (50-55 sq. ft. 1-in. thick per 100 lbs. when dry), and full efficiency for temperatures as high as 1800° F. Liberal test sample also sent on request.

THE EAGLE-PICHER LEAD COMPANY

Cincinnati, Ohio

Eagle-Picher High Temperature Insulating Materials also include Eagle Supertemp Blocks, Eagle Blankets, Eagle Loose Wool, Eagle Insulseal, Eagle Insul-stic, Eagle Finishing Cements.

When inquiring specify CEP5345 — see information request blank, pgs. 2-3



Some OLD CUSTOMS ARE GRAND!

That Saturday night scrubbing in the old tub was a grand old custom . . . before the days of modern tubs and showers!

Against the hazards of INDUSTRIAL DERMATITIS, some plants stick to old-fashioned customs . . . like the use of antiseptic oils in cutting compounds. Modern science has shown that they can't do the job COMPLETELY!

PLY Liquids and Creams—with a specific formula for each type of hazard—have proved their worth in the nation's leading industries. Pre-work application to the hands prevents irritation and often serious infection. PLY is harmless, easy-to-use, economical.

• Write TODAY for latest FREE BOOKLET
"The Answer to Industrial Dermatitis"

PIONEERS OF SKIN PROTECTION IN INDUSTRY



When inquiring specify CEP5346 — see information request blank, pgs. 2-3

SEPTEMBER-OCTOBER, 1942

MATERIALS



ASPHALT PLANK FLOORING easily and quickly applied

from dust and loose material, then receive a heavy mopping of hot asphalt. Plank should be laid immediately, driven up tight, weighted down and allowed to set until thoroughly dry. Emulsified asphalt may be used for cementing, if preferred. Planking may be laid at right angles or at an angle of 45 degrees. At right angles joints should be staggered. Joints or seams should be sealed with hot or emulsified asphalt. Wood: Clean surface or nails and projections. Asphalt saturated felt should be laid and mopped in hot asphalt. Planks may then be placed in various patterns, nailed down with large headed spikes, counter-sunk $\frac{1}{4}$ in. into plank surface. *Description* — Flooring consists of asphalt planks available in convenient widths, lengths and thicknesses. Material is a cellular asphalt composition formed under pressure by extrusion. Uniformly incorporated in the plank are long and short fibre asbestos to give resiliency and mineral filler to build up strength and resist wear. Flooring has great tensile strength and is non-skid. In addition to standard planks, a mineral surfaced type and an armored type (with imbedded metal grid) are occasionally used for extra heavy duty. Descriptive catalog available upon request.

SERVICISED PRODUCTS CORP., Dept. CEP, 6051 West 65th St., Chicago, Ill.

When inquiring specify CEP5347 — see information request blank, pgs. 2-3

Two New Lead-Base Bearing Metals Alternate for Tin-Base Babbitts

Suitable for numerous applications where bearings must withstand pressures and shock

Uses — These lead-base bearing metals are designed to replace tin-base babbitts which are now difficult to secure. Suitable for application where bearings must withstand heavy sustained pressures.

Description — One of these identified as "Pyramid" metal is suited to applications where bearings are under pressure such as in water turbines, paper mill calendar stacks and rolling machinery. The second, "Defender" metal is said to withstand shocks without cracking and is suited for use in internal combustion engines, trap rock crushers and sifter machinery. Another related product is "Magnolia" anti-friction metal for use in connection with line shafting, electric motors, pumps and general machinery.

MAGNOLIA METAL CO., Dept. CEP, 120 Bayway, Elizabeth, N. J.

When inquiring specify CEP5348 — see information request blank, pgs. 2-3

Better Than

LITHARGE and GLYCERINE for Ammonia and Freon Lines —

- X-Pando Pipe Joint Compound is perfect for use in ammonia lines, brine lines, freon, and other lines here litharge and glycerine are now used.
- X-Pando makes a joint which is easy to take apart. Yet when X-Pando sets, it ends leaks permanently.
- X-Pando is less expensive than compounds of litharge and glycerine and goes from 4 to 6 times further than other compounds.
- X-Pando is ready for

Immediate Delivery X-PANDO PIPE JOINT COMPOUND



Expands as it sets, one formula for all uses; holds anything carried in metal pipe; withstands high pressure, deflection, high temperature; vibration. Get X-Pando from your local Mill Supply House.

X-PANDO CORPORATION

43-15-36th Street, Long Island City, N. Y. Stillwell 4-7180
Canadian Distributors: La Salle Products Ltd., 159 Jean Talon
St., Montreal, Quebec, Canada

When inquiring specify CEP5349 — see information request blank, pgs. 2-3

ROBINSON



PROCESSING EQUIPMENT

— for the CHEMICAL INDUSTRY



GRINDING



MIXING



SIFTING



HANDLING

Firms with war contracts have immediate priority on our complete engineering and manufacturing facilities. Detailed manuals available. Tell us your problem.

ROBINSON MANUFACTURING COMPANY

WORKS: MUNCY, PENNA. • NEW YORK, N. Y.

When inquiring specify CEP5350 — see information request blank, pgs. 2-3



PROTECTION AGAINST MOISTURE LOSS

Not only do Bemis Waterproof Bags protect against moisture from without, but they can be made to prevent escape of desirable moisture from within. Products which tend to dry out en route or in storage are now giving complete satisfaction to users through shipment in Bemis Waterproof Bags.

These time-tested containers also can be made to retain desirable aromas and repel objectionable odors—shut out dust and dirt—resist acids and grease. And their strength and toughness provide extra protection against rough handling.

WATERPROOF DEPARTMENT

BEMIS BRO. BAG CO.

426 Poplar St., St. Louis, Mo. • 5128 Second Ave., Brooklyn, N. Y.



When inquiring specify CEP5351 — see information request blank, pgs. 2-3



Chemical Handling

1. Deep penetration, 2. Capacity loading and 3. Rapid, complete discharge, are essential performance features common to all Owen rehandling buckets.

Regardless of your job requirements, it will pay you to investigate the OWEN line which offers buckets for all kinds of work and the proper bucket for your particular work. Write NOW.

The OWEN BUCKET Company
7050 Breakwater Avenue • Cleveland, Ohio
BRANCHES: NEW YORK PHILADELPHIA CHICAGO BERKELEY, CAL.

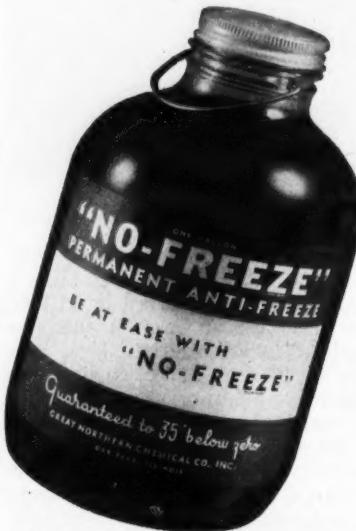


When inquiring specify CEP5352 — see information request blank, pgs. 2-3

MATERIALS

Permanent Anti-Freeze is Made from Non-Vital Materials

Prevents rust throughout cooling system, requires no regular, frequent testing



NEW ANTI-FREEZE . . . permanent type . . . made from non-critical materials

anteed against freezing down to 35 degrees below zero. Prevents rust on any part of cooling system. Does not boil off or evaporate (boiling point 324 degrees.) Manufacturer's guarantee is covered by insurance policy issued by large insurance organization.

Description — Contains no acid, calcium chloride, sodium chloride or other inorganic salts. Delivered in one gallon glass pails which are convenient means of storage for reuse next season. Product is named "No-Freeze."

GREAT NORTHERN CHEMICAL CO., INC., Dept. CEP, Oak Park, Ill.

When inquiring specify CEP5353 — see information request blank, pgs. 2-3

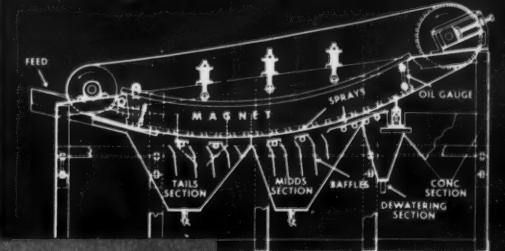
New 172 Page Chemical Catalog

172-page-catalog, 6 x 9 size, printed on fine coated stock and with plastic ring binding for utmost convenience, gives most comprehensive treatment to listing and describing the products and services of the various divisions of the organization. Organic chemicals, products for the rubber industry, phosphates and phosphorous products and plastics all are listed and described. Among the industries served are agricultural, automotive, aviation, ceramics, chemical process, cosmetics, dairy, dyestuffs, electrical, food, glass, pharmaceutical, plastics, rubber and textiles. Products are listed, in the main section of the book, alphabetically according to their chemical names or the manufacturer's trade name. A general data section contains a variety of physical and chemical information that will be useful in connection with some of the products described in the alphabetical section. Available upon request.

MONSANTO CHEMICAL CO., Dept. CEP, 1700 South Second St., St. Louis, Mo.

When inquiring specify CEP5354 — see information request blank, pgs. 2-3

A Magnetic Separator . . .



3 TYPICAL APPLICATIONS OF DINGS CROCKETT SEPARATORS:

1. Concentrating magnetite, ilmenite and similar minerals.
2. Cleaning terra-cotta medium in tank and boat process.
3. Concentrating blast furnace flux aids to overcome dilution of charge when flux is recovered and returned to smelting process.

... With Broad Application Possibilities

The Dings Crockett Separator is a wet type machine, having a high capacity and capable of producing amazingly clean cut separations. A wet feed enters the machine and is carried by an endless belt under a series of High Intensity selective pickup sections.

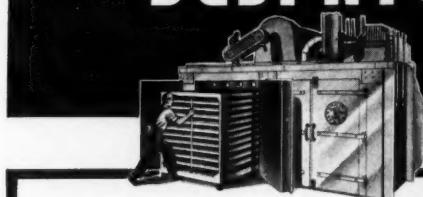
Dings is actively seeking new applications for this machine and will welcome your inquiries if you feel that it may fit your picture. Complete information supplied on request without any obligation on your part.

DINGS
MAGNETIC SEPARATOR CO.
510 E. Smith St., Milwaukee, Wis.

World's Largest Exclusive Builder of Magnetic Equipment
SEPARATION — CONCENTRATION — CRUSHER AND GRINDER PROTECTION

When inquiring specify CEP5355 — see information request blank, pgs. 2-3

SPEED UP CHEMICAL DRYING PRODUCTION WITH DESPATCH



Ovens and dryers designed to speed up the drying time for solvents, powders and solids. Whether for testing or production drying, Despatch recirculating heat can be applied with maximum control in every operation. Investigate Despatch speedy dryers today.

Write for Bulletin No. 105X—for complete information on laboratory ovens. Call for a Despatch engineer to recommend the proper dryer for your production.

DESPATCH
OVER COMPANY MINNEAPOLIS, MINNESOTA

When inquiring specify CEP 5356 — see information request blank, pgs. 2-3

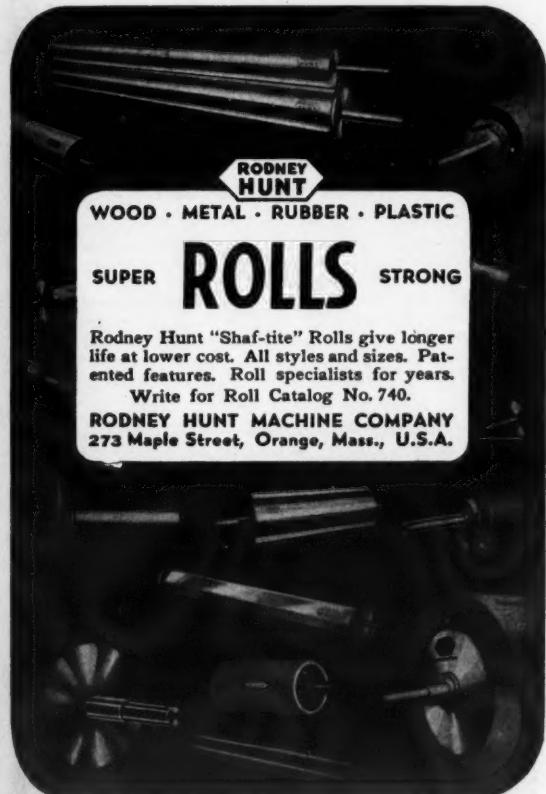
WHAT'S YOUR MIXING PROBLEM?

We want to know it — and help you solve it. Mixing problems just don't come too tough for our staff of mixing specialist engineers. And we make the equipment to do it . . . from small laboratory stirrers to heavy industrial mixers with the wallop of a tugboat propeller, in all types and models. So send us the specifications on the job you want done.

Eastern Engineering Company
49 Fox St., New Haven, Conn.

EASTERN MIXERS

When inquiring specify CEP5357 — see information request blank, pgs. 2-3



When inquiring specify CEP5358 — see information request blank, pgs. 2-5

MATERIALS

Raw Gasoline as Gas Enricher

Findings of an investigation to determine the possibilities of substituting raw gasoline as a gas enricher in place of fuel oils or gas oils are presented in a four page bulletin. The investigation was undertaken at the request of the Chicago office of the Petroleum Co-ordinator. This included cracking test made in atmosphere of blue gas. The opinion is expressed that gasoline properly handled can be used successfully for gas manufacturing purposes but that under ordinary circumstances cost is a factor. A table gives the gas enrichment properties of various petroleum products. Available upon request.

CONNELLY IRON SPONGE & GOVERNOR CO., Dept. CEP, 3154 So. California Ave., Chicago, Ill.

When inquiring specify CEP5359 — see information request blank, pgs. 2-3

Bulletins and Graphs Show Application of Metasilicate to Cleaning Compounds

A file of five technical bulletins each with accompanying graphs gives comprehensive treatment to the manner in which a commercial anhydrous sodium metasilicate, "Drymet" is used as a component in detergent mixtures. These include metal cleaners (for non-ferrous and steel), bottle, dish, laundry and fruit washing compounds, building, floor and household cleaners, kier boiling and textile scouring alkalies and paper de-inking alkalies. Bulletin (1) discusses application of the product to the manufacture of more alkaline detergent sodium silicates, (2) The pH of "Drymet"-caustic soda mixtures, (3) deals with the specific conductance of "Drymet"-caustic soda solutions, (4) gives detailed information on "Drymet"-caustic soda mixtures as base materials for superior detergent compounds while (5) is concerned with the solubility of "Drymet." Of most practical application is the graph with bulletin (1) which indicates exactly how many pounds of "Drymet" and caustic soda should be blended to produce 100 lbs. of detergent sodium silicate of any desired ratio. Complete file of bulletins available on request.

COWLES DETERGENT CO., Dept. CEP, 10525 Carnegie Ave., Cleveland, Ohio.

When inquiring specify CEP5360 — see information request blank, pgs. 2-3

Water Analyses Handbook

An unusually comprehensive "water handbook," has just been issued by a well recognized eastern organization of consultants on water problems. The book contains 64 pages, printed on heavy coated stock and spiral bound in a substantial varnished cover. Concerned with both "Industrial" and "Municipal" water it is arranged in two sections, "Water Analyses" and "Interpretations." In the first section twenty-five different methods of water analyses are discussed with procedures and calculations. Hardness, alkalinity, phosphate, turbidity, oil, calcium and others are covered. Bacteriological analyses are not included. Second section covers interpretations of the tests and their application to plant control. There are also sixteen useful technical graphs and illustrations of testing equipment. Obtainable for 50c postpaid.

W. H. & L. D. BETZ, Dept. CEP, Frankford, Philadelphia, Pa.

When inquiring specify CEP5361 — see information request blank, pgs. 2-3

★ You can automatically lubricate one machine ★ or a hundred with a

LINCOLN CENTRO-MATIC LUBRICATING SYSTEM

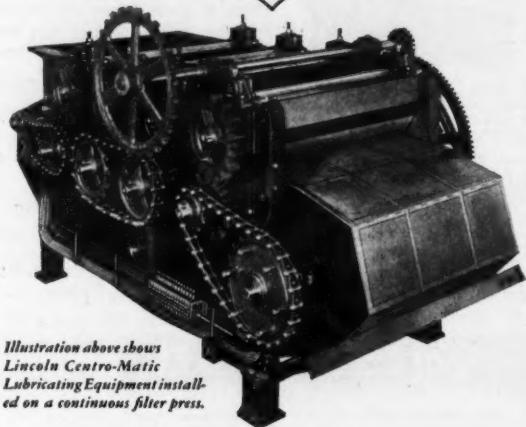


Illustration above shows Lincoln Centro-Matic Lubricating Equipment installed on a continuous filter press.

EASILY INSTALLED on new or old machines

★ CENTRO-MATIC makes it possible to lubricate all bearings from a single source . . . Clean . . . Economical.

★ Permits machines to run day and night without taking time out for lubrication service . . . No lost time.

No matter what your lubrication service requirements may be—there is a Centro-Matic System to take care of your needs.

A Centro-Matic System consists of a number of Centro-Matic Injectors — one for each bearing — and a hand operated or a power operated Centro-Matic Lubricant Pump. A power operated system can be semi-automatic or it can be full automatic. The injectors can be grouped in manifold or located separately at each bearing. In either arrangement only a single lubricant supply line is required.

Send for COPY of BULLETIN 888

— or send us specifications of the machinery to be lubricated, and our engineers will gladly make recommendations. No obligation.

142-15A

LINCOLN ENGINEERING COMPANY

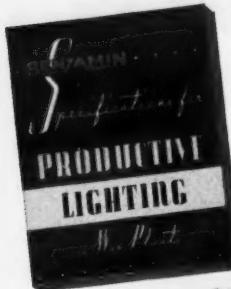
Pioneer Builders of Engineered Lubricating Equipment

ST. LOUIS, MO., U. S. A.

When inquiring specify CEP5362 — see information request blank, pgs. 2-3

NEW WAR EDITION

FREE to Executives, Specifying Engineers and all others concerned with Lighting



21 Ready-to-Use Solutions

In this manual are twenty-one typical problem solutions based upon Benjamin Specifications for Productive Lighting for Victory production. Also pages on how to approach the lighting problem, how to analyze the seeing task, how to select the proper lighting equipment... how to determine the proper

PROCESS PLANT LOCATIONS

Up-to-date Solutions to Such Lighting Problems as:

Safe Lighting in Atmospheres containing Highly Flammable and Explosive Vapors
Safe Lighting where Combustible Dusts Ignitable Flyings or Fibres are Present
Lighting in Locations with Deteriorating Effects of Steam Vapors and Moisture
Protecting Material in Open Vats from Contamination in case of broken lamps

Send for Free Copy Today

No cost or obligation of any kind. Simply address the Benjamin Electric Mfg. Co., Dept. LL, Des Plaines, Illinois.



When inquiring specify CEP5363 — see information request blank, pgs. 2-3

NOT A FILTERING HEADACHE IN A CARLOAD!



Here are two of three Bird Filters going out to take their place on the very front line of war production. They'll be handling the No. 1 raw material of the war program — handling it swiftly, safely, surely, efficiently. One of the great things about the Bird Continuous Centrifugal Filter and the part it is playing in meeting today's urgent demands is its ability to go about the job steadily and quietly with a minimum of fussing and attention. It gets the filtering job done — and done right! Why not find out more about it as it applies to YOUR job?

BIRD MACHINE COMPANY
SOUTH WALPOLE · MASSACHUSETTS

When inquiring specify CEP5364 — see information request blank, pgs. 2-3

MATERIALS

Non-Inflammable, Wax-Free Paint Stripper has Wide Application

Complete removal obtained in few minutes, leaving surface ready for re-painting

Uses — For quick, thorough and safe removal of enamel, varnish, lacquer, zinc chromate primers and other paints. Removes animal or casein glue, linoleum that has been cemented to floor. As solvent for rubber cement.

Features — Non-inflammable, wax free, requires no after cleaning with additional inflammable solvents; will not injure aluminum alloy, alclad, polished steel, stainless steel or other reactive metals or fabrics (with the exception of rayon.) No obnoxious vapors and is safe to workers. Cleans stainless steel leaving protective film which makes frequent polishing unnecessary.

Application — Can be applied with a brush or spray. The latter is more practical, of course, for all larger operations and manufacturer recommends a small tank-type, air pressure, sprayer of two gallon capacity which does not atomize the stripper. The latter action causes evaporation and consequent waste. Loosened paint can be removed by air gun, brush or any other mechanical means. Stripper is applied full strength.

Performance — Stripper acts so rapidly the "lifting action" starts almost immediately. Varnish, lacquer (including rezyl and natural gum types,) and some enamels require a minimum of five minutes for complete removal, while the most obdurate of baked enamels require not more than 15 minutes. Quick results are also attained on industrial and bakelite enamels. It evaporates slowly even in hot climates. Possesses sufficient viscosity to cling to vertical surfaces.

Description — Product is a clear water white liquid with a slight, pleasant odor. It is NOT carbon tetrachloride and does not contain ether or chloroform or any conventional chlorinated hydrocarbon solvents. Flying sparks will not ignite the stripper or the old material that has been removed. Can be used safely near welding machines, grinding wheels and other equipment which throws sparks. After this material has been applied the stripped surface is ready for repainting immediately. Can be kept in stock indefinitely, no settling out. Proper ventilation is all that is required to dissipate vapors, when using this product, which are not such as to annoy or become a medical hazard. Is being used in floor refinishing, on oil storage tanks, by the petroleum and railroad companies and various industrial organizations. Product is named Turco Stripper L-595.

TURCO PRODUCTS CO., INC., Dept. 36, 6135 So. Central Ave., Los Angeles, Cal.

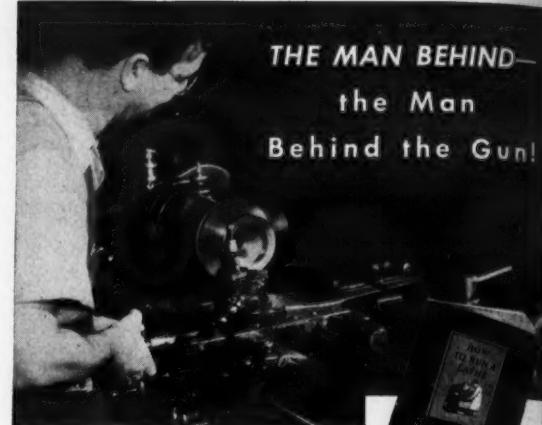
When inquiring specify CEP5365 — see information request blank, pgs. 2-3

Chemical Coatings Manual

A manual of products, largely protective and decorative coatings, has just been issued by large chemical organization comprising many divisions and subsidiaries. It is valuable in providing a ready reference as to sources and its scope is indicated in the fact that one company of this group alone produces over eighty-five different protective coatings. Designed originally for distribution to employees it is available to technical purchasing personnel.

INTERCHEMICAL CORP., Dept. CEP, 75 Varick St., New York, N. Y.

When inquiring specify CEP5366 — see information request blank, pgs. 2-3



THE MAN BEHIND
the Man
Behind the Gun!

"HOW TO RUN A LATHE"

A 128-page book on the operation and care of metal working lathes. Used by lathe operators, apprentices and students. Size 5 1/4" x 8" — contains 365 clear illustrations. Send 25¢ for your copy.

IN TIME OF WAR, the man behind the machine is just as important as the man behind the gun. And the toolroom becomes the first line of defense for every war industry. Here, where precision is of the utmost importance, you will find South Bend Lathes. Modern in design, built with extreme care, they are fast and accurate on the most exacting classes of toolroom work. They are made in five sizes, 9" to 16" swings, with toolroom or manufacturing equipment. Write for catalog and name of dealer.



SOUTH BEND LATHE WORKS

Dept. 280

South Bend, Indiana

LATHE BUILDERS FOR 35 YEARS

When inquiring specify CEP5367 — see information request blank, pgs. 2-3

SPEAKING OF Performance

PARSONS OVAL BAG DUST ARRESTORS

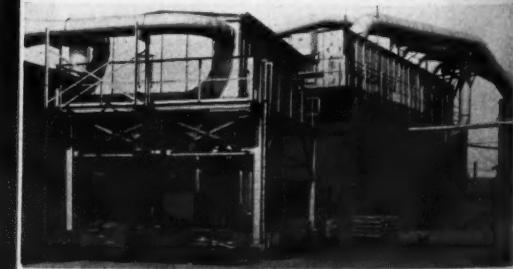
Rate Top Honors

In Parsons Oval Bag Dust Arrestors you find exclusive engineering features that have earned their stripes on sheer performance and efficiency in every-day use under all kinds of conditions.

• Patented Oval filtering bags • Non-rusting arrester case

• Simple texrope drive • Heavy duty welded hoppers

These are just a few of the many exclusive features that go to make Parsons Oval Bag Dust Arrestors the talk of the trade. Send for free booklet on "Mastery Of The Air."



PARSONS ENGINEERING CORP.
CLEVELAND, OHIO

When inquiring specify CEP5368 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

STOP Liquid Splashes-Sparks Flying Particles

with this

2-WAY DEFENSE PROGRAM

★ There is no "give" in this Cesco No. 750 General Utility Face Shield, which accounts for its ability to "take" and shunt off splashes, sparks and flying particles in the chemical process and metal fabricating industries. Extremely light in weight, with entire window metal bound for added strength and rigidity.



CESCO No. 750 FACE SHIELD

enables its wearer to proceed aggressively, confident of working with the utmost in face and eye protection and comfort.

New Cesco No. 94 RESPIRATOR

Here is a respirator that FITS better, offers more COMFORT to the wearer! Carries a new Approval by the U. S. Bureau of Mines (No. BM-2142) for protection against Type A (Silica) — Lead and Nuisance Dusts. Unusually large filtering area (40 sq. in.) promotes easier breathing. New Exhale Valve with speaking diaphragm permits a normal exchange of conversation. Function with a high degree of efficiency against all common dusts, making it unnecessary to change filters under average working conditions. Get special circular today. Write.

CHICAGO EYE SHIELD CO.

2337 Warren Blvd.
Chicago • Illinois

When inquiring specify CEP5369 — see information request blank, pgs. 2-3



Send for free paper-weight-size sample

BLAW-KNOX STEEL GRATING

BLAW-KNOX DIVISION of Blaw-Knox Co.
Farmers Bank Bldg., Pittsburgh, Pa.

When inquiring specify CEP5370 — see information request blank, pgs. 2-3

MATERIALS

Vitamins Cut Illness Absences; Aid in Reducing Part Rejects 75 Per Cent

Health and general efficiency of workers increased by vitamin capsules distributed by plant

Problem — Operators of large plants were concerned with increased absence of workers due to illness. Relatively high percentage of rejection of parts was also noted. Workmen were examined for vitamin deficiency and need for remedying this lack was decided upon.

Solution — Hermetically sealed capsules, containing the daily requirement of all known vitamins necessary to maintain normal health, were distributed to workers.

Results — Volume of absences greatly reduced. After a period of several months increased efficiency reflected in decreased number of parts rejected — in some cases as much as 75%. Average rejections per person had been 1.7% and at the end of four months was only 0.2%. Workmen also reported better eye comfort.

CINCINNATI VITAMIN CO., Dept. CEP, 1524 Madison Road, Cincinnati, Ohio.

When inquiring specify CEP5371 — see information request blank, pgs. 2-3

One Coat Wrinkle Finish Offered in Many Colors and Patterns

Easily applied to various metal and wood products, dries in 5 to 15 minutes

Uses — Provides a quick, uniform wrinkle finish over all metal articles in one coat. Also applicable to wood, pottery, paper and cloth. Used on tools, castings, implements, hardware, pre-fabricated metal, machines and motors, instruments and furniture.

Application — Any regular finishing equipment can be used. Material can be sprayed, brushed, dipped or roller coated. Dries in a few minutes under infra-red lights and also works excellently in conventional baking ovens. No dust-tight or special finishing room required.

Description — Concealing one coat finish. Unlimited variety of colors and designs easily obtained. Finish is smooth and uniform and resists chipping. Hides imperfections, seams, welds. Obtainable without priorities.

LASTING PRODUCTS CO., Dept. CEP, 212 So. Franklin Rd., Baltimore, Md.

When inquiring specify CEP5372 — see information request blank, pgs. 2-3

Glue for Kraft Paper Box Liners

Adheres to all waterproof stock, easily brushed, odorless, white color, diluted with water

Uses — For application where duplex kraft paper is used as a liner for boxes. Seals shipments to insure delivery in good condition under any climatic condition.

Description — Product is a full waterproof glue which will adhere to all waterproof liner stock. Now being used extensively. Glue applies easily with brush, not a sticky, gummy pitch. Odorless, white in color and can be diluted with water if desired. Not affected by varying weather conditions. Packed in 5 and 10 gallon trial sizes and 50 gal. drums. Product is called Glu-weld No. C-255.

F. G. FINDLEY CO., Dept. CEP, 1243 North 10th St., Milwaukee, Wis.

When inquiring specify CEP5373 — see information request blank, pgs. 2-3

"... I can read "Mikes" better."
"... I can see height gauge readily."
"... I get no shadows and no glare."
"... I have no more headaches."

DOCTORS SAY...

VERD-A-RAY

CONSERVES VITAMIN "A"
Reduces Eye and Body Fatigue

EMPLOYEES Say . . .

Reduces Injury to Which Fatigue Contributes -- Stimulates Morale -- Increases Production Per Man Hour.

NO NEW FIXTURES REQUIRED

Used in Any Incandescent Fitting
Present Lamp Discounts Apply.

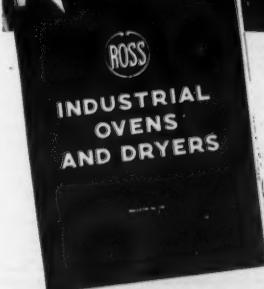
VISIT BOOTHES 13 - 14

National Safety Council Exhibit, Oct. 27 - 29
Hotel Sherman, Chicago. Industrial Users and Mill Supply and Safety Equipment Distributors are asked to write for samples and Literature FREE on this sensational bulb.

SAVE ELECTRIC CORP. of TOLEDO, O.

When inquiring specify CEP5374 — see information request blank, pgs. 2-3

SEND FOR YOUR COPY OF THIS NEW BULLETIN



The Way To Faster, Better Drying, Baking

It treats subjects of Oven Construction, Methods of Heating and Material Handling. Write for Bulletin 130. No obligation.

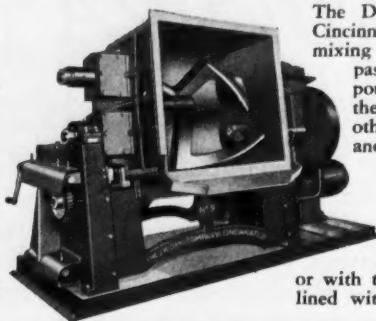
J. O. ROSS ENGINEERING CORPORATION
350 MADISON AVE., NEW YORK, N. Y.
CHICAGO, ILL.
ROSS ENGINEERING OF CANADA, LTD. Sudbury, Revelstoke, Moncton

DETROIT, MICH.

When inquiring specify CEP5375 — see information request blank, pgs. 2-3

DAY-----

CINCINNATI MIXER



The DAY Heavy Duty Cincinnati Mixer for mixing of storage battery pastes, rubber compounds, clays, synthetic resins, and for other heavy pastes and plastics, and can be furnished in working capacities from 5 to 775 gallons; with or without jacketed tanks; or with tanks made of, or lined with special metals.

PONY MIXER (Gearless Type)

The DAY Balanced Top, Pony Mixer (Gearless Type) for printing inks, paint pigments and other light pastes. The vertical blades revolve while the can rotates in the opposite direction, bringing all parts of the mass under the action of the mixing blades. Stationary scraper blades keep material from accumulating on sides of can.

The top casting is balanced with counter-weights enabling the agitator to be easily tilted. Both the agitator and the can are driven by heavy roller chains. It is built in five sizes having capacities of 40, 50, 75, 100 and 125 gallons.



RO-BALL "Stabilized" GYRATING SCREENS

The DAY Ro-Ball "stabilized" Gyrating Screens are built in 14 sizes, providing maximum screening capacity per square foot screen area.



Makes a clean accurate separation of the most difficult material. The DAY Super-Active Ball Cleaning Device insures a clean and open mesh at all times, with from two to five separations.

THE J.H. **DAY** COMPANY.....
CINCINNATI-Ohio

When inquiring specify CEP5370 — see information request blank, pgs. 2-3

EQUIPMENT FOR PRODUCTION



ONE PIECE NAILLESS BOX . . for bottled acids

New Shipping Box for Bottled Acids

Light weight, strong, one piece construction, protects bottled products

Uses — This type of box features a design that makes it particularly applicable to shipping acids that use bottles as containers.

Features — Box is assembled without nails. One piece style. It offers low tare weight thereby cutting freight costs. Fast, easy packing and handling keeps shipment moving without delay.

Description — Box is assembled without nails. Design provides utmost protection of bottles against shocks, breakage or other hazards. Unusual strength is provided on all six faces. Boxes can be stored flat saving space and safely conserving them for future use. Complete information is available upon request.

GENERAL BOX CO., Dept. CEP, 522 No. Dearborn St., Chicago, Ill.

When inquiring specify CEP5377 — see information request blank, pgs. 2-3

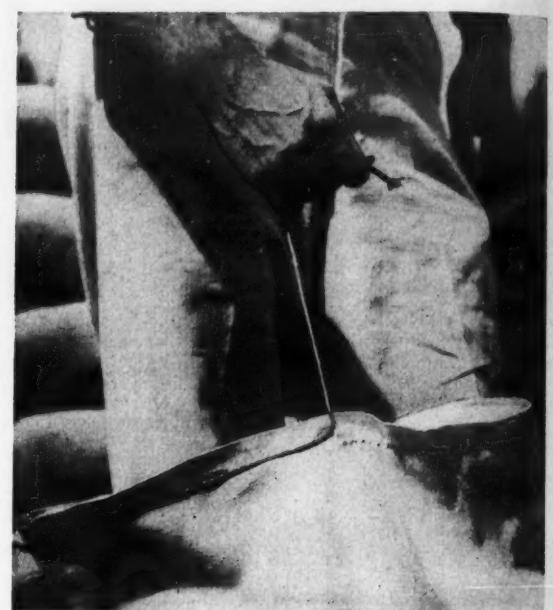
Rip-Cord Closure Opens Bags Instantly without Damage

Speeds handling, reduces stacking space; present machines easily adapted to making closure by easily available accessories

Uses — This rip-cord closure provides a method of closing cotton and burlap bags in such a manner that they may be easily and quickly reopened without injury. For bags used for cement, grains, feeds, chemicals and various bulk products.

Features — Speeds handling operations. Partial opening forms spout for handy pouring without waste. Conforms to conservation efforts. Only minor adjustments required to adapt bag sewing machines. More bags stored in limited space, more bags per load. Life of bag for re-use is lengthened.

Description — Rip-cord closure is made by sewing a special cotton twine across one side of the bag at the same time and with the same thread used to close the bag. Bag is opened easily by simply grasping an end of the loose cord



BAG WITH RIP-CORD CLOSURE . . easily opened without damage by jerking end of loose cord

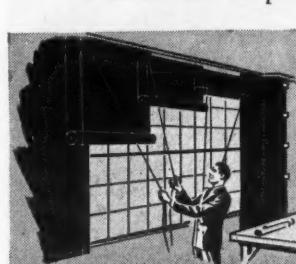
and jerking quickly toward the other end of the closure. Increases efficiency of filling valve-bags. Any commercial sewing machine of the two thread double lock stitch type may be adapted easily and at small cost to make the rip-cord. These machines need only the addition of a special presser foot to feed the rip-cord and a stand and guide loop for the cord. These can be secured from machine manufacturers. Complete information on this closure, known as "Bemis Rip-Cord," as it applies to specific cases will be furnished on request.

BEMIS BROS. BAG CO., Dept. CEP, 431 Poplar St., St. Louis, Mo.

When inquiring specify CEP5378 — see information request blank, pgs. 2-3

Flame-Proof Blackout Blinds Fit Any Windows, Stop Flying Glass

Overlapping simplifies installation; panels for permanent blackout locations; widely tested in actual use in plants, and buildings



BLACKOUT BLINDS . . with cord adjustment

Uses — To provide an efficient and simplified means of blacking out windows in accordance with regulations.

Features — Chemically flame-proofed. Design permits overlapping making it possible to adapt these blinds to windows of any dimensions. Not only blacks out windows but protects against flying glass, principal bombing hazard.

Description — Blind is of the cord type, raising and lowering easily. Requires the use of no essential war material,

PRODUCTION

being made of heavy, crepe fibre. This material is not only light proof but remains so. It will not pin-hole and there is nothing to crack or peel off. Chemically treated to make it incapable of supporting combustion. Unless immersed in liquid or subject to long, severe exposure will not flame even in direct contact with fire. Side panels are available for permanent installation at the end of a series of windows, at corners, posts or other obstructions to insure a complete seal. The same crepe fibre material is available for outside installation on skylights and for effectively blacking out saw-tooth buildings without the reflections often encountered in other methods. Original installation cost of blinds is about the same as paint.

CLOPAY, Dept. CEP, 1207 Clopay Sq., Cincinnati, Ohio.

When inquiring specify CEP5379 — see information request blank, pgs. 2-3

Variable All-Spray Nozzle Eliminates Solid Stream

Adjustable 40 to 150 degree spray; effective in extinguishing and cooling applications

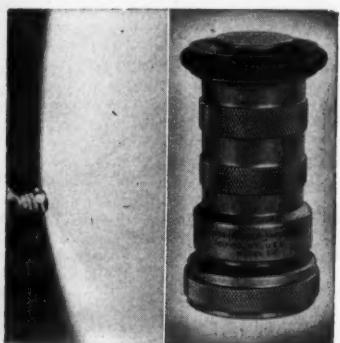


NOZZLE . . . opens immediately to 40°

cool and protect structures menaced by exposure hazard, knock down heavy smoke and dissipate poisonous fumes. For extinguishment of oil fires and also for general cooling purposes.

Features — Possibility of intervention of solid water stream eliminated. Degree of spray easily controlled by rotation of tip.

Performance — Particularly effective on class A fires (wood, rubbish, textiles, etc.) as spray absorbs more heat than stream.



FULL CURTAIN spray and all spray nozzle

Description — This "Alfcospray" Model 10F can be furnished for any 2½ in. hose thread, also for Underwriters' tip thread, 2 in. hose thread or 1½ in. thread. Nozzle opens immediately to 40 degree spray and can be increased to full curtain of 150 degrees and reversed back to shut off by slight rotation of nozzle. In 40 degree position the capacity is about 95 and 135 G.P.M. at 50 and 100 pounds inlet water pressure respectively. Full curtain capacity at these pressures is about 170 and 215 G.P.M.

AMERICAN - LA FRANCE FOAMITE CORP., Dept. CEP, Elmira, N. Y.

When inquiring specify CEP5380 — see information request blank, pgs. 2-3



Grip a Bending V-Belt You'll See How the CONCAVE SIDE Saves Belts—Saves Rubber—Saves Power!



Bend any V-belt and you can feel it change shape! The top is under tension and grows narrower. The bottom is under pressure—therefore it widens. These two conflicting stresses force a straight-sided V-belt to bulge in the sheave groove. (See figure 1 on the right.) This bulging causes uneven wear on the sides of the belt—shorter life!

Now look at figure 2. There you see what happens if the V-belt is built with the patented Concave side. The stresses of bending merely straighten the Concave side—making it exactly fit the sheave groove. This means uniform wear and, therefore, longer life—a saving in belts, a saving in the Nation's rubber supply. Again, the full side of the belt uniformly grips the pulley—carries heavier loads without slipping—another saving of belts and a saving in power too!

Only belts built by Gates are built with the Concave side, a Gates patent.

What Happens
When a
V-Belt Bends



THE GATES RUBBER COMPANY
Engineering Offices and Stocks in All Large Industrial Centers

GATES **VULCO**
ROPE **DRIVES**

Chicago, Ill.
649 West Washington

New York City
215-219 Fourth Avenue

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Los Angeles, Cal.
2240 East Washington Blvd.

Denver, Colo.
999 South Broadway

Dallas, Tex.
2213 Griffin Street

Portland, Ore.
333 N. W. 5th Avenue

San Francisco, Cal.
2700 16th Street

When inquiring specify CEP5381 . . . see information request blanks, pgs. 2-3

ACME Silverstitchers

SPEED CARTON STITCHING

Delivery requirements on rush war orders are more easily met . . . in plants where the new sturdily built, low cost Acme Silverstitchers are installed. Sealing by stitching is often five times as fast as other sealing methods. And by actual test, its holding power is twice as strong on the average. Economical too! It saves in material, space and labor. Acme Silverstitchers are made in standard and special sizes and types . . . to meet every stitching requirement.



TEAMED WITH ACME SILVERSTITCH FOR BETTER FASTER STITCHING

Acme Silverstitchers and Acme Silversitch are engineered to function as a unit. Both wire and equipment are supplied and guaranteed by Acme Steel Company. Write today for the facts on faster and better stapling . . . lower carton stitching costs. There is no obligation.

ACME STEEL COMPANY

2808 Archer Avenue, Chicago, Illinois

BRANCHES AND SALES OFFICES IN PRINCIPAL CITIES

When inquiring specify CEP5382 — see information request blank, pgs. 2-3

NEW PORTABLE CONVEYOR SPEEDS PACKAGE HANDLING



Buschman ROLL-OR-WHEEL portable conveyors speed package handling in production, or to and from loading platforms, trucks, box cars, stockrooms and warehouses.

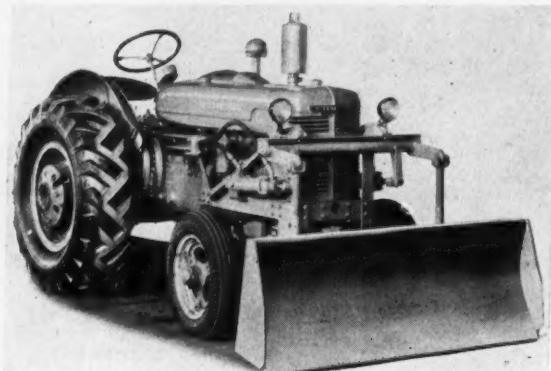
In 10-foot, straight or curved sections—coupled to any length—roller or wheel equipped—easel, caster or tripod supports—quickly, easily set up, or moved from place to place where needed. Ideal for narrow aisles, crowded quarters.

Write for Bulletin No. C-36, showing many applications.

THE E. W. BUSCHMAN COMPANY, INC.
418 NEW STREET
CINCINNATI, O.

When inquiring specify CEP5383 — see information request blank, pgs. 2-3

PRODUCTION



"BABY" HYDRAULIC BULLDOZER . . . efficient unit for small scale operations

Small, Hydraulic Bulldozer Proves Value in Variety of Work

Used with light, wheeled tractor where large units would be impractical

Uses — For use on light wheeled tractors in levelling, grading, backfilling, removing and also handling such loose materials as chemicals, solid fuels, cinders, fertilizers. **Features** — Easily maneuvered, operates in close quarters. Highly efficient where large tractors would be impractical. Travels under own power from job to job.

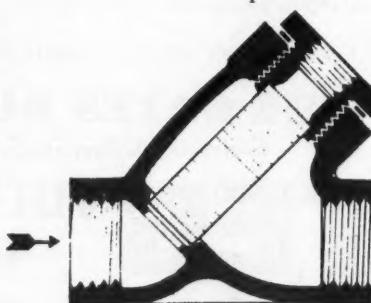
Description — Model 282 shown is for International 1-4 tractor. Bulldozer is hydraulically controlled, powered by rear-power-take-off hydraulic pump unit. Blade is lifted and lowered by dual cylinders. Moldboard is curved with side wings. Height 24 in. length 66 in. Cutting edge 1/2 in. x 6 in. Lift 12 1/2 in. Cut 6 in. Approximate weight 1200 lbs. Bulletin No. 835 describes Model 282 and is available upon request.

THE BAKER MFG. CO., Dept. CEP, 501 Stanford Ave., Springfield, Ill.

When inquiring specify CEP5384 — see information request blank, pgs. 2-3

Pipe Strainers Have Monel Wire Screens That are Easily Removed

Protect steam traps, reducing valves and other pipe line equipment from dirt, insuring proper operation

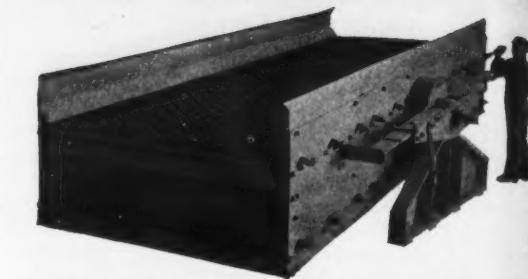


SCREWED END PIPE STRAINER . . . sectional view shows woven wire screen

Mesh fine enough for required straining but having ample

Uses — Prevents dirt, chips, scale, welding dross and packing shreds from getting into working parts of steam traps, reducing valves and other types of pipe line equipment.

Features — Made of high grade monel metal wire.



LENGTHEN THE TIME BETWEEN SCREEN CLOTH CHANGES

Screen Cloth is made of critical metals. The longer it can serve before need for replacement, the more of these metals that can be diverted to the War Effort.

Make your present cloth do as long as possible. When replacement does become necessary, install Robins Improved Super-Gyraloy Screen Cloth. Its especially blended alloys, heat treatment and microstructure enable greater resistance to abrasion without sacrificing ductility.

Robins Improved Super-Gyraloy Screen Cloth is made in Lock Crimp Weave for

FOR MATERIAL AID IN
MATERIALS HANDLING

When inquiring specify CEP5385 — see information request blank, pgs. 2-3

ROBINS

CONVEYING BELT COMPANY

PASSAIC • N. J.

It's ROBINS

WYO-LITE PLASTIC INSULATION

covers
1500
SQ.FEET PER TON



A Circulating Heater
Insulated with WYO-LITE

Write for Details and Prices

WYO-LITE INSULATING PRODUCTS

4613 East 71st St.,

Cleveland, Ohio

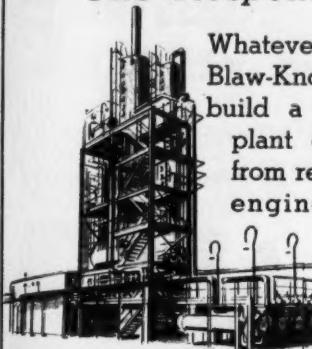
1 TON of Wyo-Lite Covers 1500 SQ. FT.

When inquiring specify CEP5386 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

PROCESS PLANTS

from idea to Operation
One Responsibility



Whatever your process—Blaw-Knox is ready to build a complete new plant or an addition from research through engineering, fabrication and construction, to initial operation.

Complete plants or equipment for the following processes . . .

Distillation
Gas Absorption
Solvent Extraction
Solvent Recovery
Heat Transfer
Furnacing
Cracking

Kilning and
Calcining
Polymerizing
Evaporation
Crystallization
Drying
Mixing and Stirring

Organic Synthesis
Emulsification
High Pressure
Processing
Impregnating
Gas Cleaning
and others

BLAW-KNOX DIVISION OF BLAW-KNOX CO.

FARMERS BANK BLDG., PITTSBURGH, PA.
Offices in Principal Cities

When inquiring specify CEP5387 — see information request blank, pgs. 2-3

Good for All Pressures... without Change of Valve or Seat



- Quicker Heating
- Small Size
- Light Weight
- One Moving Part
- Low Price

OVER
130,000
SOLD

Sold by more than 100 Mill Supply Distributors
throughout the U. S. A. See your supply house or
write for Catalog T-1736.

YARNALL-WARING CO., 125 Mermaid Ave., Phila.

YARWAY IMPULSE STEAM TRAP

When inquiring specify CEP5388 — see information request blank, pgs. 2-3

PRODUCTION

free area for passage of clean condensate, oil or other fluids. Cadmium plated inside and out for protection against corrosion and better appearance.

Description — Designed for ready installation in any pipe line, either horizontal or vertical. Blow-off bushing is made from cold-rolled steel bar stock (in larger sizes of cast iron) with straight thread, machined face and copper gasket for attachment to body. This construction permits easy removal of bushing when screen is taken out for cleaning, insures proper alignment of screen when it is replaced in body and provides a tight joint when bushing is screwed back in place. Body of screwed strainer is of cast iron for working pressures up to 250 lbs. For over that up to 500 lbs. steel body is used. All blow off connections have copper gaskets and are easily removable and replaceable. Available in $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2 in. Also made in flanged type (used for marine installations) and in welding type with socket or beveled ends. Descriptive bulletin No. S-200 available upon request.

YARNALL-WARING CO., Dept. CEP, Chestnut Hill, Philadelphia, Pa.

When inquiring specify CEP5389 — see information request blank, pgs. 2-3

Siphon Unit Fills Glass or Cans, Handles Foamy Products

Self-draining tank, non-drip, flexible spouts,
adjustable bottle rest



SIPHON FILLER . . .
quickly adjustable
to requirements

Uses — Machine is especially designed to handle foamy products, filling them in glass containers, replacing the tins formerly used. The wide variety of materials that can be handled on this filler include disinfectants, insecticides, water soluble floor waxes and cleaning solutions. Tins also may be filled on this machine.

Features — Automatic inlet valve equipped with extra long float provides "double leverage," opening and closing power of the float valve assuring full flow and accurate control of the liquid level under all plant operating conditions.

Description — Filler is of siphon type. Reservoir is covered by a one piece metal hood with a removable front panel which permits inspection. It is a glass enameled casting so shaped that it drains itself dry making it easy to change from one liquid to another without delay. Fully balanced bottle rest is operated by turnbuckle providing micromatic adjustments for accurate filling. Filling spouts are mounted at a convenient angle and are flexible being hinged to a saddle piece by means of a cotter pin. Further adjustment is possible since the saddle piece can be moved along the bar to which it is attached by loosening one set screw. Each spout has a fixed stem which seats against an outer tube thus making a tight seal which eliminates dripping.

SCIENTIFIC FILTER CO., Dept. CEP, 1 Franklin Square, New York, N. Y.

When inquiring specify CEP5390 — see information request blank, pgs. 2-3

ISOLATION GOES TO WAR!

Isolationists are OUT but ISOLATION in Pulsafeeders are helping us win this WAR.



Write for Bulletin BLW-25

WILSON CHEMICAL FEEDERS, INC.

205 Clinton St.

Buffalo, N. Y.

When inquiring specify CEP5391 — see information request blank, pgs. 2-3

"Our installations called for worm gear drives—our experience called for Cleveland's"

Look at Cleveland's record in a particularly vital war supplies industry—one that's noted for the heavy shock loads it's forever piling on its equipment.

Then see Cleveland at work in this industry's great Plants—and hear the comment of an experienced Mechanical Engineer:



"Worm gear speed reducers simplify our power transmission, and our good experience has led us to purchase more than 50 Clevelands since 1926." Clevelands keep your Process Equipment in full operation.

The Cleveland Worm & Gear Company, 3257 E. 80th St., Cleveland, Ohio.

Affiliate: The Farval Corporation, Cleveland, Manufacturers of Centralized Systems of Lubrication.

In Canada: PEACOCK BROTHERS LIMITED

CLEVELAND WORM GEAR Speed Reducers

When inquiring specify CEP5392 — see information request blank, pgs. 2-3

Higher Quality + Increased Production + Low Cost Now Possible With

COCHRANE-BECKER SYSTEM

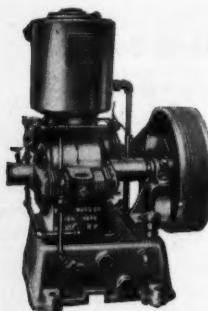
Users of the Cochrane-Becker System say—"We've improved our quality"—"Our production output has increased"—"Fuel costs have gone down as much as 27.5%." These, and there are many more, are statements of users of the Cochrane-Becker System of high pressure condensate return. Condensate is removed from the process equipment with automatic and continuous separation and removal of entrapped air and is returned to the boiler at high temperature and high pressure. All this means **Faster Heat—Higher Temperatures—More Uniform Heating—Lower Maintenance and Lower Fuel Costs.**

COCHRANE CORPORATION • 3147 N. 17th St., Phila., Pa.

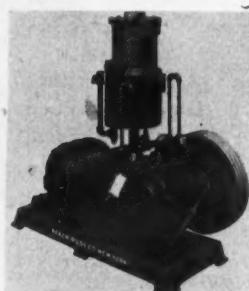
Cochrane

COCHRANE
BECKER
SYSTEM

When inquiring specify CEP5393 — see information request blank, pgs. 2-3



Type RP Rotary Piston Pump — 50 microns blank flange test on wet vacuum. Capacities 15 to 75 c.f.m.



To Step-Up
High Vacuum
Processes
INVESTIGATE
BEACH-RUSS
PUMPS for

- HIGHEST EFFICIENCY
- FASTER PUMP DOWN
- LONGER SERVICE

Get Bulletin No. 74 and 75 for the "dope" on the means of getting high economy, high vacuum on your vacuum drying, distillation, filtering, sealing and other processes. They will show you how to get better performance.

BEACH-RUSS COMPANY
40 Church St. New York, N. Y.

Type SS Rotary Pump — 5 m.m. blank flange test. Capacities 6 to 375 c.f.m.

BEACH-RUSS *High* **Vacuum** **PUMPS**

When inquiring specify CEP5394 — see information request blank, pgs. 2-3

PRODUCTION

New Floodlight Offers Choice of Three Reflectors

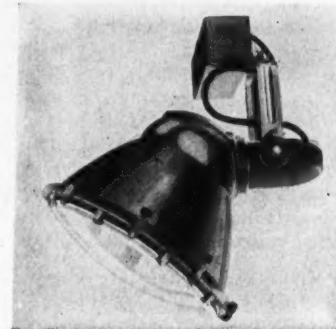
Can be used with glass door or as open unit, easily adjusted and serviced

Uses — Choice of three reflectors make this floodlight applicable to a wide variety of floodlighting requirements.

Features — To save vital materials cast iron is used for the socket housing. Asbestos gasket between the reflector and housing keeps the floodlight completely dry.

Description — Three reflectors available: (1) chromium-plated reflector for narrow beam widths, (2) a painted steel reflector for wider beam widths, and (3) an internal silvered glass reflector that is described as being 10 to 35% more efficient than metal reflecting surfaces. Door glass is obtainable in plain or stippled convex heat resisting glass, or the floodlight may be operated as an open unit. A resetting ring forms repositioning stop in the right-hand trunnion for cross arm mounting. The ring is also applicable as a horizontal repositioning stop when oval base and pipe clamp fittings are used. Once the projector is properly adjusted it can be turned to this position accurately after servicing. Unit accommodates 750, 1000, or 1500 watt general service lamps.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N. Y.

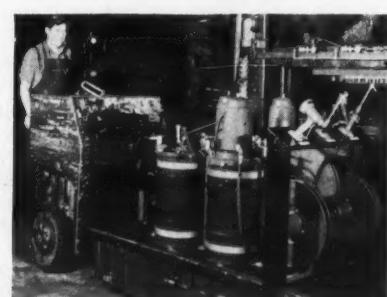


STEEL FLOODLIGHT . . . offers choice of three reflectors

When inquiring specify CEP5395 — see information request blank, pgs. 2-3

Lubrication Units for Mounting on Hand or Electric Trucks

Power driven bearing and gear lubricators with ample hose easily service inaccessible points; four and six unit capacity models



several operators can work from the same

Uses — As a complete industrial lubrication service station, quickly transferable to any part of the plant, for on the spot service.

Features — Each unit can be handled by one man or unit simultane-

168 HOUR WORK WEEK

An Accepted Work Week For All —

— CLARK INDUSTRIAL HAULAGE VEHICLES

As the Shifts Come and Go
Clark's Trucks Keep Rolling

★
CLARK

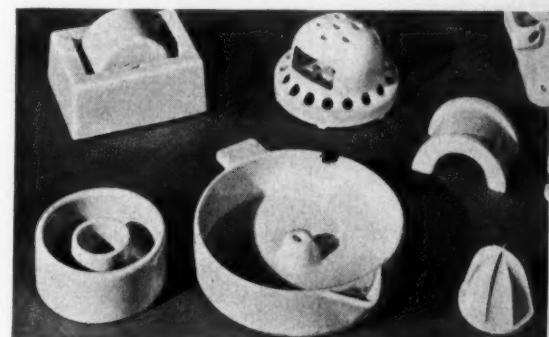
UTILITRUC
Loads of 1000
to 7000 lbs.



Over 60 Models of
Industrial Haulage Vehicles

CLARK TRUCTRACTOR
DIVISION OF CLARK EQUIPMENT COMPANY
BATTLE CREEK, MICHIGAN, U.S.A.

When inquiring specify CEP5396 — see information request blank, pgs. 2-3



COLONIAL PORCELAIN useful in chemical industry

Colonial makes all types of porcelain to serve every conceivable purpose. Many colors besides white are available. Colonial Porcelain pieces, parts and fittings are made to customers' specifications and are molded to uniform tolerances. Quality, too, is uniform, for each piece is processed in gas-fired kilns in which temperature is controlled within a narrow range.

Important for chemical uses is Colonial Porcelain's alkali and acid resistant qualities. Also it will not rust or disintegrate and is fire and fume resistant. Send us samples or drawings for price quotations.

Colonial
PORCELAIN
MADE TO ORDER

The Colonial Insulator Co.
967 Grant St., Akron, Ohio
Chicago Office: 1706 Fullerton Ave.

When inquiring specify CEP5397 — see information request blank, pgs. 2-3



OF CORROSION-RESISTANT HIGH-SILICON IRON

Body and plug are of hard, corrosion-resistant Duriron or Durichlor, connected to flanged pipe by split flanges; to screwed or lead pipe by companion flanges. Widely used for sulfuric acid, acid sludges, etc.



When inquiring specify CEP5398 — see information request blank, pgs. 2-3

Edmont Rubberized Fabric INDUSTRIAL GLOVES

Hand protection at its best with these liquid-proof, long wearing gloves. The rubber coating is reinforced with strong fabric — no snagging or tearing. Pliable on the hands and efficient to work with. As quickly on and off as a pair of canvas gloves. Three types of coating for every industrial need. Sizes for both men and women.

SYNTHETIC "7" — Exceptionally high resistance to oil, grease and all petroleum solvents as well as acids, chemicals and caustics. Long wear economy. Very flexible.

NEOPRENE — Oil proof and acid resisting. Best type for handling hot materials. Also where sharp and jagged edges are involved. A tough coating for heavy duty work.

RECLAIM-LATEX — For handling weak acids, caustics and corrosive materials. A popular glove for lighter work not involving oil, grease or other rubber solvents. Good abrasion resistance.

For further information, samples and prices, see leading distributor or write direct, briefly describing operation involved, materials handled and temperature conditions.



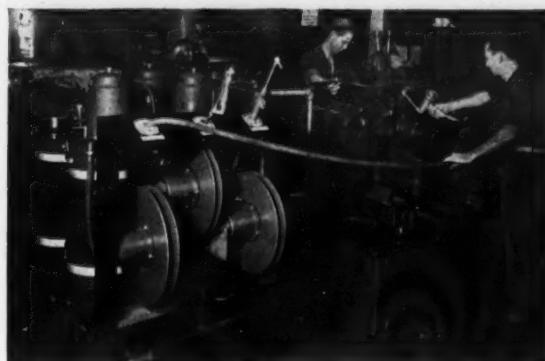
EDMONT MANUFACTURING COMPANY
500 Orange St. Coshocton, Ohio

When inquiring specify CEP5399 — see information request blank, pgs. 2-3



SEPTEMBER-OCTOBER, 1942

PRODUCTION



MULTIPLE LUBRICATING UNIT . . . portable by hand or power truck . . . combination control valve and meter for accuracy

ously. Convenient hose lengths facilitate the servicing of distant and inaccessible points. Combination control valve and meter for registering the amount of lubricant used assures clean, accurate and economical operation. Facilitates for handling all grades of grease, oils and flushing compounds.

Description — Two standard models of four and six unit capacity, include a high pressure pump with 20 feet of hose on reel for power lubrication of pressure gun fittings. Also a low pressure power pump with 15 feet of hose on reel for gear lubricants and machine oils. Two or more hand operated low pressure pumps for dispensing lubricants and oil, and a hand operated pump for loading hand guns. Advance models have capacity for six 50 lb. lubricant units and similar pumps for dispensing lubricants for bearings and gears. Advance models are equipped with a power head of magazine type which can be transferred from one pump to another converting it to a power operated pressure pump. All models are supplied with air compressor or with air hose on reel for quick connection to plant air lines. Units are also equipped with shelves, racks, drawers for convenient storage of tools and equipment. Mounted on base so they may be easily and securely placed on hand or powered trucks, these portable stations measure 3 ft. x 7 ft. and 3 ft. x 8 ft. Custom built versions of any of these models for special requirements made to specifications.

STEWART-WARNER CORP., Alemite Div., Dept. CEP, 1800 Diversey Parkway, Chicago, Ill.

When inquiring specify CEP5400 — see information request blank, pgs. 2-3

Gas, Oil and Combined Gas-Oil Burners

Series of four-page-illustrated bulletins describes industrial gas burners, oil burners and combination oil and gas units. A wide range constant differential type, oil burning system is featured in the first of this series of three bulletins and its ability for maintaining a wide capacity range without sacrifice of spray quality is featured. The text dealing with fundamental design and operation is augmented with drawings and sectional photos. Two other models of burners are dealt with in the second bulletin which describes the several types of atomizers available and other features. Combined gas and oil burner is given detailed treatment in third bulletin. Bulletins 107, 108 and 203 available upon request.

PEABODY ENGINEERING CORP., Dept. CEP, 1 West 47th St., New York, N. Y.

When inquiring specify CEP5401 — see information request blank, pgs. 2-3

NOW! An Improved Oil and Chemical Resistant Gasket with SUPERIOR SEALING QUALITIES

► **LIGNOFLEX** was developed by Fel-Pro engineers to solve the gasket and sealing problem of a leading automotive manufacturer—and was highly successful.

LIGNOFLEX GASKETS

This new synthetic gasket material combines unusual resilience with high sealing efficiency and remarkable resistance to Acids and other Chemicals, Oil and Gasoline. If you have had gasket failures under these conditions or require a substitute for some gasket material now unobtainable, investigate LIGNOFLEX. Send for Free Samples and complete data.

Write for FREE Sample Book
Contains samples of 36 Gasket Materials and full data on each.

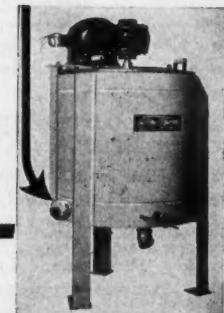


FELT PRODUCTS MFG. CO., 1515 CARROLL AVE., CHICAGO, ILL.

When inquiring specify CEP5402 — see information request blank, pgs. 2-3

Sta-Warm

A SERVICE as well as EQUIPMENT for the Better Heating of Metals and Compounds



★ Correct design properly precedes good construction if the best results are to be attained — design that takes into account the particular needs and conditions surrounding your compound. Out of long experience Sta-Warm engineers can design a pot or heater that will speed production, lower costs and give dependable service. Let us advise with you on how Sta-Warm can improve your processes.



Complete Equipment for Heating,
Pouring, Conveying Compounds

Economical Electric "Dry" Heat	Low Heat Concentration
Uniform Heating Sides & Bottom	Accurate Thermostatic control — Fixed or Selective
No cold spots, carbonization, fire hazard	Heated, Non-freeze, Non-clog outlets

STA-WARM ELECTRIC CO.,
999 Chestnut St., Ravenna, Ohio

When inquiring specify CEP5403 — see information request blank, pgs. 2-3

PUMP DEPENDABILITY for WAR PRODUCTION PLANTS

BLACKMER
• ROTARY •
PUMPS
Can Help You

.... maintain your
168-hour-week
schedule. The
sketches at the
right show you why.

Power Pumps

5 to 700 GPM

Pressures to 300

psi.

Hand Pumps

7 to 25 GPM

54 models

Send for these new bulletins, prepared by Blackmer Engineers to

HELP YOU TAKE CARE OF YOUR PRESENT PUMPS.

SER-1: "How to Make
Rotary Pumps Last Longer;"
a maintenance check-list
in card form.

No. 301: "Facts About
Rotary Pumps;" diagrams
and data on swinging
vane type pumps.

No. 302: "Pump Engineering Data;" useful charts
and tables for engineers.

THESE BULLETINS ARE
FREE TO PUMP USERS.

Write Blackmer Pump Company, 1849 Century Avenue, S.W.,
Grand Rapids, Michigan.



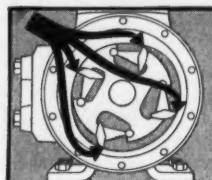
When inquiring specify CEP5404 — see information request blank, pgs. 2-3

EQUIPMENT FOR PRODUCTION

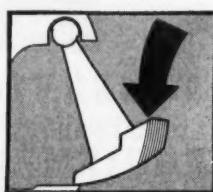
Pulley Oiler Delivers Constant
Measured Supply Direct to Shaft
No drippage or oil waste when pulley is idle, wick
acts as a filter



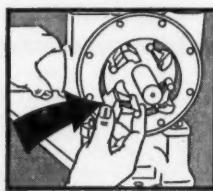
PULLEY OILER
permits close
adjustment



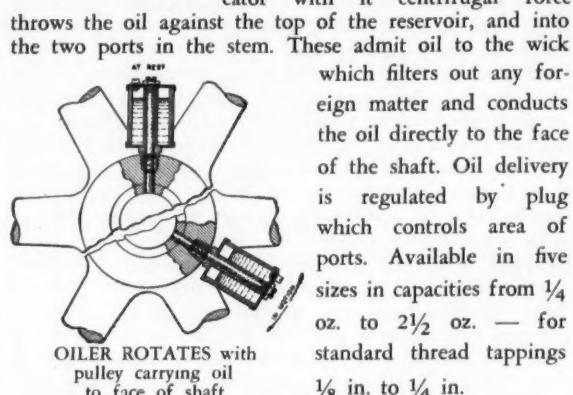
Wear is confined to
these points: the tips of
the "buckets" (swinging
vanes.)



This much can wear
away, without affecting
capacity of the pump.



When finally worn out,
the "buckets" are
replaced (a 20-minute job)
and pump is restored to
original efficiency.



OILER ROTATES with
pulley carrying oil
to face of shaft

OIL-RITE CORP., Dept. CEP, 3466 So. 13th St., Milwaukee, Wis.

When inquiring specify CEP5405 — see information request blank, pgs. 2-3

Small Sockets Fit Special Jobs

Eighteen piece assortment of $\frac{1}{4}$ " square drive sockets
designed for small nuts and bolts, difficult places

Uses — Made especially for adjustments to the small nuts and bolts found on trucks, electric refrigerating systems, cars and similar equipment; useful for work on heaters, generators, small electrical apparatus, instruments and other devices.

Features — All pieces with exception of the spinner handle are made with rust-resistant finish. Socket walls are thin for getting into close quarters, but have exceptional strength. All attachments are slender for reaching "hard-to-get-at" places, yet have been made strong through full length heat treatment.

Description — This 18 piece assortment of $\frac{1}{4}$ " square drive sockets and attachments is known as the "No. V51

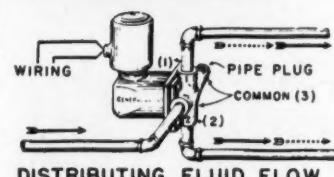
Set." Contents include eight sockets with openings from $\frac{1}{16}$ " to $\frac{7}{16}$ " for adjustments to hexagon nuts and bolts; three sockets with openings from $\frac{1}{4}$ " to $\frac{3}{8}$ " for square nuts and bolts; $4\frac{1}{2}$ " sliding "T" handle; 2" and $3\frac{1}{2}$ " cross handle. Entire set is furnished in a pocket size metal case which measures only $6\frac{1}{4}$ " x 3" x 1". Complete, the set weighs only $1\frac{3}{4}$ lbs.

BONNEY FORGE & TOOL WORKS, Dept. CEP, Allentown, Pa.

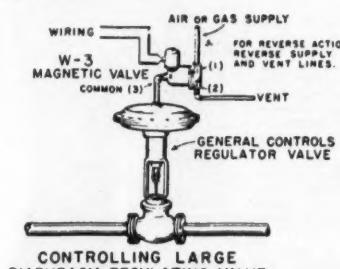
When inquiring specify CEP5406 — see information request blank, pgs. 2-3

Three Way Magnetic Valve has Wide Use in Fluid Control

Will handle oil, water, gas, air, steam and similar
fluids and vapors



APPLICATIONS:



valve cannot assume an intermediate position. This is so because when port No. 1 is open to the flow, port No. 2 is closed when current is on. When current is off port No. 2 is open to the flow and port No. 1 is closed. Design permits high pressure connections to either common No. 1 or No. 2 ports without affecting valve operation as long as pressures (differential) are held within ratings. Typical applications of the W-3 valve as a pilot valve controlling valve as a flow control distributing fluid flow, are illustrated. Inside pipe sizes up to 1 in. Port sizes up to $15/32$ in. Available for all commercial voltages — A.C. or D.C.

GENERAL CONTROLS, Dept. CEP, Glendale, Calif.

When inquiring specify CEP5407 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

IMMEDIATE DELIVERY of Rebuilt, Guaranteed CHEMICAL EQUIPMENT

8 Rotary Kilns, 7' 6" x 60' long; 1/2" steel plate
2 Devine Rotary Vacuum Dryers 3' x 30'
1 Dryer 7' x 7' x 6'; electrically heated
1 Alcohol Recovery Still; Pot, 7' x 10'; Column 60" x 36", condns.
1 Devine Cast Iron Vacuum Still; 100 gal. capacity
2 Copper Jacketed Vacuum Pans with condensers; 3' and 5'
1 Struthers-Wells Triple Effect Evaporator; 582 sq. ft. ea. eff.
8 Copper Tubular Condensers, 114-1" tubes; 180 sq. ft.
2 W. & P. Jacketed Vacuum Mixers 16-VII BB; 150 gal.
W. & P. Unjacketed Mixer Size 17 x BB; 200 gal.
1 J. H. Day Heavy Duty Mogul Mixer 100 gal.
Devine Laboratory Drum Dryer; 2' x 2'
1 75 gal. Jacketed Steel Autoclave
6 Buhrstone Lined 6' x 6' Pebble Mills (other sizes available)
2 Micro Pulverizers; one No. 3 and one Bantam
2 Boilers, 250 H.P. certified for 150 lbs.
1 Sperry 42" x 42" 57 Plate Filter Press
1 Shriver Filter Press Skeletons; 2 — 30" and 1 — 42"
1 J. H. Day Rotex Sifter 20" x 48"
2 Tyler Hammer Screens 3' x 5' with generators
Williams heavy duty Hammer Mill 36" x 18"
2 Stainless Steel 2000 gal. Truck Type Tanks
8 Hor. Steel Tanks; 10,000 gal. to 20,000 gal.
1 Set of Cooling Rolls; 30" x 72"; capacity 5000 lbs.
2 Aluminum 150 gal. and 300 gal. Steam Jacketed Kettles
1 2000 gal. Glass Lined Jacketed and Agitated Tank
10 Glass Lined Jacketed Tanks from 125 gal. to 300 gal.
4 Single Shell Glass Lined Tanks from 50 gal. to 1000 gal.
SPECIAL: 1 Lot of Vacuum and Steam Pressure Gauges; 24" dials
* * SEND FOR LATEST ISSUE OF FIRST FACTS * *

FIRST MACHINERY CORPORATION
GUARANTEED EQUIPMENT
EAST 9th STREET and EAST RIVER DRIVE
LIQUIDATORS APPRAISERS
NEW YORK, N.Y.

When inquiring specify CEP5408 — see information request blank, pgs. 2-3



PNEUMIX

air motored agitators

A battery of Pneumix agitators is shown at work in a color room. If you have any mixing problem, especially on hazardous materials, write us for recommendations. Pneumix will give you spark-free, splash-proof performance.

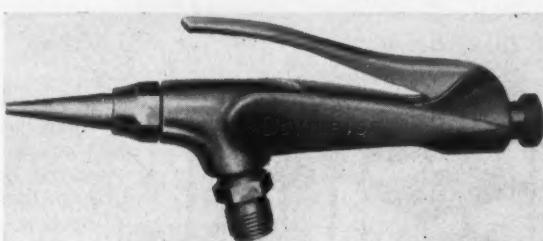
Send for our bulletin.

ECLIPSE AIR BRUSH
COMPANY INC.

393 Park Ave., Newark, N. J.

When inquiring specify CEP5409 — see information request blank, pgs. 2-3

PRODUCTION



FLOW GUN . . . for caulking and other flowing operations

Flow Gun for Plastic Materials

Offers advantages of free flow, light weight and ease of handling

Uses — For caulking, cementing and other flowing operations where plastic materials such as crack fillers, sealing compounds and heavy paints are used. Useful in doping and cementing fabric parts and for a wide variety of production jobs.

Features — Less restriction to flow of material and greater ease in handling.

Description — Small, light weight, well balanced, fits hand comfortably and is easily operated. Material is fed to gun under pressure and is extruded into cracks, grooves, over seams which are to be sealed. Volume of flow controlled either by regulation of the pressure or by a simple knurled nut adjustment of the fluid needle. Nozzles for all materials are available. Gun is identified as Type SGF.

DeVILBISS CO., Dept. CEP, 300 Phillips Ave., Toledo, Ohio.

When inquiring specify CEP5410 — see information request blank, pgs. 2-3

Guard For Thumb & Two Fingers

Made in wool felt or chrome leather style; back of elastic webbing gives cool, easy fit



FINGER GUARD of wool felt

Description — Guard is made of wool felt, a material exceptionally adapted for handling oily parts as well as hot dies, moulds or other materials. The guard is also furnished in chrome leather. In both types backs are of elastic to assure a cool, comfortable fit. Sold as pairs, all rights, all lefts or any desired combination at no extra cost.

INDUSTRIAL GLOVES CO., Dept. CEP, Danville, Ill.

When inquiring specify CEP5411 — see information request blank, pgs. 2-3

End Your POIDOMETER MEASUREMENT TROUBLES . . . SPEED YOUR PRODUCTION WITH K. O. BRAND POIDOMETER BELTING

Replaces unsatisfactory and unobtainable rubber poidometer belting . . . guaranteed to give accurate measurement. Backed by 40 years experience making high grade LEATHER BELTING for every purpose and LEATHER SPECIALTIES for every industrial use.

Your inquiries will receive prompt, interested attention. Tell us your belting troubles. We'll try to find the one right answer.

The Eagle Belting & Leather Co.

1403 Central Parkway
CINCINNATI OHIO

When inquiring specify CEP5412 — see information request blank, pgs. 2-3

DRACCO PNEUMATIC CONVEYORS make 10 definite SAVINGS

There are 10 ways that DRACCO Pneumatic Conveyors save money, and any plant having chemicals, granular materials, etc., to move can make SEVERAL of these savings: (1) control of dust when transporting powdered material, (2) continuous automatic operation, (3) low maintenance cost, (4) labor saving, (5) improved working conditions, (6) lower cost of material due to receiving same in bulk, (7) saving in cost of packaging, (8) no loss of material in handling, (9) no contamination, (10) no interfering with the existing machinery.

DRACCO BULLETIN
No. 526



Write for Bulletin No. 526

DRACCO CORPORATION

Successors to The Dust Recovering & Conveying Co.
4060 East 116th Street, Cleveland, Ohio New York Office: 180 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

When inquiring specify CEP5413 — see information request blank, pgs. 2-3



"This is going to make a
**TOUGH
JOB
EASIER!"**

TODAY, in many wartime plants, FLEUR-O-LIERS—certified fluorescent lighting fixtures—are speeding production, saving time, guarding against fatigue and eyestrain. FLEUR-O-LIERS give you such important features as: Certified ballasts and starters, durability and safety, maximum light output, ease of maintenance, correct ventilation. Made by over 45 leading fixture manufacturers in different sizes and designs.

FLEUR-O-LIERS must now be bought under the necessary WPB priority rating. Ask your electrical contractor, wholesaler or electric service company.

Get free FLEUR-O-LIER booklet and list of manufacturers. Write FLEUR-O-LIER Manufacturers, 2154-9 Keith Building, Cleveland, Ohio.

FLEUR-O-LIERS

CERTIFIED FIXTURES FOR FLUORESCENT LIGHTING

Participation in the FLEUR-O-LIER MANUFACTURERS' program is open to any manufacturer who complies with FLEUR-O-LIER requirements

When inquiring specify CEP5414 — see information request blank, pgs. 2-3

Specify the New
V-BELT DRIVEN
Gast Rotary Air Pump

FOR MEDIUM VACUUM SERVICE



Model 15F50 in three sizes.

COMPLETE LINE INCLUDES 12 sizes, Gast Rotary Air Pumps, $\frac{1}{2}$ to 23 c. f. m. Pressures up to 30 psi. Vacuum to 28".

Direct-connected models Gast Rotary Air Pumps and Compressors in 12 sizes from $\frac{1}{2}$ to 23 c.f.m. Pressures up to 90 psi. Vacuum to 28".

★ Some of the advantages offered you by this new combination of Gast Rotary design and V-Belt Drive include—slow speed, quiet operation—long life—ease of installation regardless of shaft height or diameter—and low power required in proportion to air volume delivered. Already, this newest Gast Pump has found wide application. For automatic laboratory or plant processes, under vacuum or low pressure; for liquid transferring or filling, etc., use Gast Air Pumps—the pumps leading manufacturers furnish as standard equipment on their machines.

SEND FOR YOUR **FREE COPY**

NEW AIR PUMP CATALOG



Contains full descriptions, engineering data, performance tables, and many photographs of interesting actual applications. The complete line of Gast Rotary Air Pumps and Compressors including the new V-Belt Drive. Write for your copy.

GAST MFG. CORP.
101 Hinkley Street
Benton Harbor, Mich.

When inquiring specify CEP5413 — see information request blank, pgs. 2-3

PRODUCTION

Storage Stands Stop Loss of Tools

Easily moved to job, handy for stock pick-up, drawers have strong, flat key locks



TOOL STORAGE STANDS . . . in one, two and three drawer models

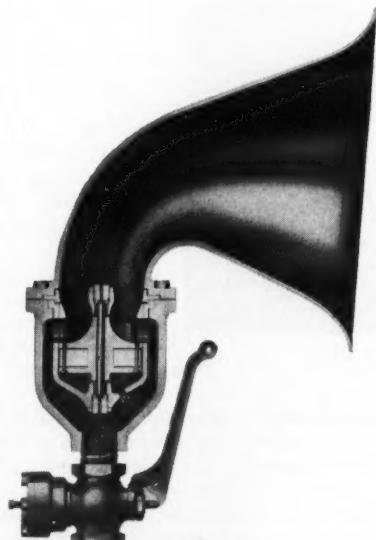
drawer inserts. The stands are sturdy in construction with clean, trim lines, free rolling quiet casters. Drawers are easy sliding and have flat key locks. Descriptive Catalog No. 331 sent on request.

LYON METAL PRODUCTS, INC., Dept. CEP, 3028 Clark St., Aurora, Ill.

When inquiring specify CEP5416 — see information request blank, pgs. 2-3

Steam or Air Operated Siren for Signalling or Air Raid Alarm

Reaches peak in three to five seconds; can be furnished with solenoid valve for electric remote control



SIREN . . . horn shaped for maximum carrying power in all directions

ft. Larger (Type 45) produces 125 to 130 decibels at the

Uses — For efficient individual storage of tools of workers on one, two or three shift operations. Useful around production machines as toters to the job. Convenient for assembly lines. Handy for inspectors and maintenance men and for stock pick-up and transportation.

Description — These tool stands are available with one, two or three

A MOTOR FOR USE
IN MAGNESIUM AND ALUMINUM DUST . . .
and other combustible metal dusts

HERE'S a motor specifically approved by Underwriters' Laboratories, Inc., for service in the presence of magnesium dust, aluminum powder, and other combustible metal dusts. It fills a critical need of ordnance and metal-working plants, and of those handling combustible metals in powder form, or machining, grinding, or polishing combustible metals. It's another FIRST among G-E motors for hazardous locations. Bulletin GEA-3922 describes it—write today for your copy. *General Electric Company, Schenectady, New York.*

The typical Class II, Group E, motor shown above is available up to 125 hp

GENERAL  ELECTRIC

When inquiring specify CEP5417 — see information request blank, pgs. 2-3

*What's a good
HOTEL
IN DETROIT?*



We're glad you asked . . . because there's more than one good hotel in this city. We could name six or eight outstanding hotels offering fine accommodations at comparable rates.

Well then, what hotel should you stop at in Detroit? We say you'll like any of our leading hotels . . . but we ask that you give us a try.

We think we have a little extra to offer. It's difficult to describe this "little extra" but perhaps our long standing slogan can say it for us—

Aglow with friendliness
HOTEL FORT SHELBY
DETROIT
J. E. Frawley, General Manager

When inquiring specify CEP5418 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

Quick, Easy Way to Heat Liquids Electrically

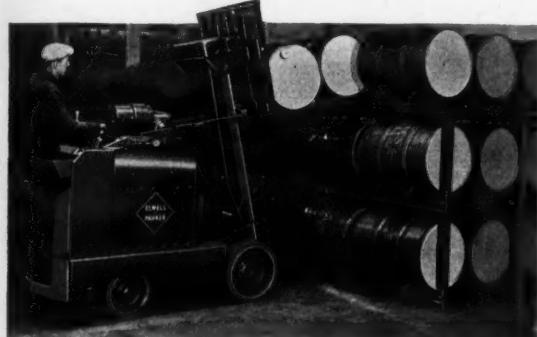
G-E
Calrod
Immersion Heaters
Simple to Install
Accurate in Control

G-E CALROD immersion heaters offer you one of the quickest and most accurate methods of heating water, oils, paraffin, and similar liquids. Quickly installed, too. Just screw them into the tank, pipe, barrel, or other metal container you may be using. A thermostat regulates the temperature automatically.

They come in ratings up to 10,000 watts and lengths up to 46 inches. Can be used in any chemical solution that will not corrode common metals. Very economical. Order from a G-E distributor, our nearest office, or direct from Section 675-49, General Electric Co., Schenectady, N. Y.

GENERAL ELECTRIC

When inquiring specify CEP5419 — see information request blank, pgs. 2-3



Use the "UP" to Triple Your Present Warehouse Capacity!

You can multiply the storage capacity of your present warehouses up to maximum floor load without putting a single dollar into new construction, by:

Using Elwell-Parker Fork Trucks to fill them to the roof with your particular Process Loads in Barrels (or Drums), Boxes, Bags, Bales—tiered high on pallets, skids or racks.

Enlarged storage space for all materials relieves congestion—helps increase your production. Big-volume transportation of your loads eliminates waste—multiplies your manpower. Elwell-Parker Engineers are available on request to make an immediate survey of load-transportation in your Process Plant.

The Elwell-Parker Electric Company, 4239 St. Clair Avenue, Cleveland, Ohio

ELWELL-PARKER Power Industrial TRUCKS

When inquiring specify CEP5420 — see information request blank, pgs. 2-3

PRODUCTION

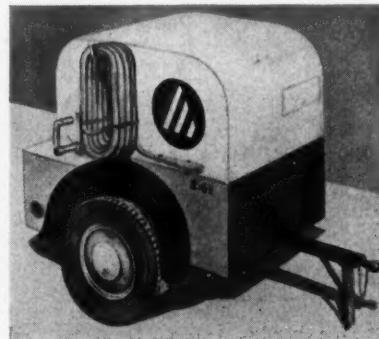
same distance. The principle parts of this siren are the rotor, rotor cage, control valve and horn. Rotor has a series of reactive slots as well as a number of intermediate reaction holes to prevent stalling. When the control valve is open by depressing the lever, the medium (steam or air) passes through the reactive slots of the rotor, causing it to rotate within the rotor cage. Brake shoes of the rotor first prevent over speeding, second reduce the time required to bring the rotor to a stop when the main valve is closed and third halt the rising tone of the siren at a relatively constant point on successive blowings. Small (type 30) siren uses steam or air. 50 lbs. minimum—200 lbs. maximum pressure. Temperature — 450 degrees F. (total). Consumption — steam, approximately 1100 lbs. per hour; air approximately 500 lbs. of free air per minute. Larger model designed primarily for steam. Pressure 75 — 200 lbs. Temperature 450 degrees F. (total). Consumption, approximately 3,000 lbs. steam per hour. Requires 1500 ft. of air per minute for air operation. Constant pitch available in model 45 if desired. Bulletin 29 gives full specifications.

FOSTER ENGINEERING CO., Dept. CEP, 109 Monroe St., Newark, N. J.

When inquiring specify CEP5421 — see information request blank, pgs. 2-3

Dual Emergency Unit Serves as Water Purifier - Fire Extinguisher

Uses ozone to oxidize bacterial contamination, pumps water for fire fighting at 200 gpm



WATER PURIFIER . . . can be used as fire extinguisher

contamination. Clutch cuts out sterilizing device converting equipment to fire extinguisher.

Description — By use of ozone bacteria is literally burned out of contaminated water and delivered pure, colorless, tasteless and odorless. It makes possible the safe emergency use of water from open tanks and other exposed sources when emergencies necessitate such use, regardless of the length of time water has been in storage. For fire application 50 feet of 4½ in. intake hose and 400 feet of 2½ in. fire hose afford a 500 foot operating radius from water source. Unit is mounted on a two wheel trailer. Gasoline engine drives electric generator and the fire pump. Water purifying rate is 20 gallons a minute, fire hose rate 200 gallons per minute, at 200 lbs. pressure.

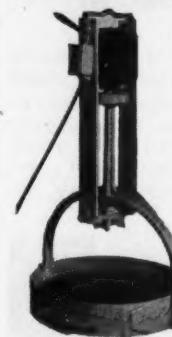
TECHNICRAFT ENGINEERING CO., Dept. CEP, 5610 So. Soto St., Los Angeles, Calif.

When inquiring specify CEP5422 — see information request blank, pgs. 2-3

IF YOU SIFT Anything...

YOU CAN DO IT BETTER WITH

**THE NEW LOWE
ELECTRIC SIFTER**



Sifts liquids, powders or granular materials with equal ease.

Easily equipped for dust-proof sifting.

Average power cost — 1c per hour.

Can be equipped with any mesh screen.

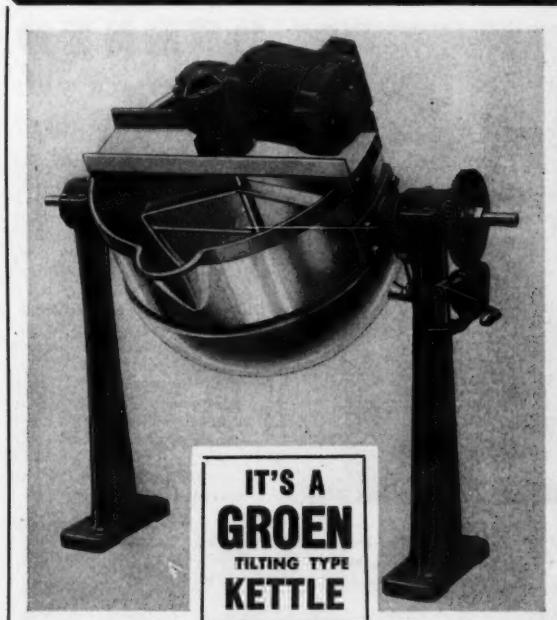
All moving parts protected from dust and dirt.

Totally enclosed ball-bearing motor ensures low maintenance and long life.

Excellent Deliveries on Standard Motors
Get Information and Prices Today

The Federal Foundry Supply Company
4600 E. 71st CLEVELAND, OHIO

When inquiring specify CEP5423 — see information request blank, pgs. 2-3



EQUIPPED WITH SINGLE MOTOR DRIVEN AGITATOR

WRITE FOR
OUR NEW
KETTLE
CATALOG

IT'S A
GROEN
TILTING TYPE
KETTLE

Model shown is 2/3 jacketed type . . . widely popular with Chemical Plants, Packers, Feed Processing Plants, Drug Makers, etc. Sturdily built—dependable—capable—its reliable performing ability have made it the standard of comparison. Write us on priority-covered needs.

GROEN MFG. CO. (HALF A CENTURY OF FINE KETTLES)
4537 West Armitage Avenue, CHICAGO ILLINOIS

When inquiring specify CEP5424 — see information request blank, pgs. 2-3

GENERAL All-Bounds



MAKE YOUR
WAR PRODUCTS
MOVE
FASTER

Eliminating lost motion . . . saving floor space . . . providing easier, faster handling . . . the General All-Bound is helping scores of chemical producers maintain production line speed in their shipping rooms.

The General All-Bound is shipped flat, yet two-thirds assembled — even inexperienced workmen can complete assembly in record time. No nails are necessary. The All-

Bound can be closed and securely sealed, simply by bending sturdy wire loops.

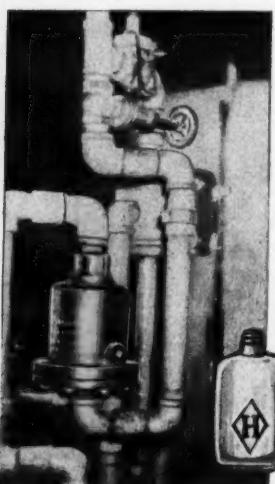
There are 13 strategically located General Box plants. There is one near you — especially trained General Box men are ready and willing to help you solve your packing and shipping problems. Write for our "Research" booklet.



GENERAL BOX COMPANY

General Offices: 522 N. Dearborn St., Chicago, Ill. District Offices and Plants: Brooklyn, Cincinnati, Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon, Continental Box Company, Inc.: Houston, Dallas.

When inquiring specify CEP5425 — see information request blank, pgs. 2-3



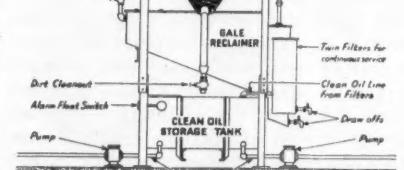
OPENED a bottleneck with Clean, Dry Air!

A. H. Heisey & Company, the well-known glassware people at Newark, Ohio encountered difficulty removing moisture from bottles too small-necked to wipe. Compressed air nozzles, tried out, blew in moisture, flecks of oil and scale from the compressed air lines. They installed a Logan

Aridifier which removes all compressed air contamination by centrifugal force and opened the wet bottle "bottleneck." They get clean dry air now and the cost of the unit was negligible compared to the savings effected.

This is only one of hundreds of Aridifier "success" stories. If you use compressed air, get the facts in Bulletin 639.

LOGAN ENGINEERING CO.
4900 Lawrence Avenue
CHICAGO, ILLINOIS



OIL RECLAIMER . . . employs gravity principle

ing parts and seldom needs attention. Provides for the conservation of oil in accord with war program.

Operation — When the mixture of dirty, contaminated oil is either pumped or allowed to flow by gravity into

PRODUCTION

Glass Bottle Closure Dispenses Contents One Drop at a Time

Adaptable to handling numerous fluids of varying viscosities



DISPENSER . . . accurately proportions bottled fluids drop by drop

dispenser employing rubber bulb.

Description — The closure consists of a glass tube inserted tightly into the neck of the bottle, so that there is no air space around it. The section of the tube within the bottle has an opening in it at a point that is just slightly below the neck of the bottle. The opening of the exterior portion of the tube is of narrower diameter than the one inside so that when the bottle is turned up-side-down, the liquid no matter what its viscosity, flows out only one drop at a time.

ORIGINATION INC., Dept. CEP, 400 No. Michigan Ave., Chicago, Ill.

When inquiring specify CEP5427 — see information request blank, pgs. 2-3

Oil Reclaimer and Clarifier Employs Gravity Principle

Intercepts, desludges and clarifies oil to condition it for further use

Uses — Equipment is designed to intercept, de-sludge and clarify oil so completely that it can be used over and over again.

Features — Operates on the gravity principle and is therefore economical in operation as it has no moving



filter facts

There are many reasons why Sparkler Filters appeal to the practical manufacturer —

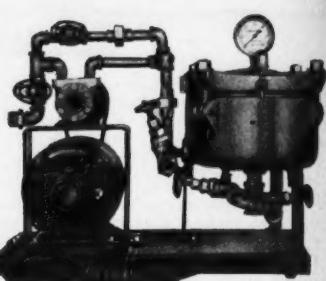
1st — The laboratory pint-sized Filter gives a perfect sample of what any Sparkler Filter will do in production.

2nd — All Sparkler Filters use the exclusive horizontal plate method of filtration. The nests of Filter Plates are interchangeable, taking a cake thick or thin as required, and using any of the various filter aids, diatomaceous earth, activated carbons, filter papers, wire cloths, asbestos, fuller's earths, bleaching or absorbent clays in proportion best suited for work to be done quickly and thoroughly.

for
HEAVIEST WAXES
or **MOST VOLATILE**
LIQUIDS
SAVES
cleaning time,
powder and
assembly time.
....

Write for details
on filtering your
special product.

SPARKLER MFG.
COMPANY
242 Lake Street
MUNDELEIN, ILL.



HORIZONTAL PLATE
FILTERS
1 PINT TO 10,000 G.P.H.

When inquiring specify CEP5428 — see information request blank, pgs. 2-3



SLY DUST COLLECTOR

DOES A 4-FOLD JOB

Exhausts —

1—BLAST CLEANING EQUIPMENT

2—TUMBLING MILLS

3—GRINDERS

View of Sly Dust Filter with standard supports mounted on concrete piers, for truck passage under dust hoppers.

4—POLISHING WHEELS AND GRINDERS
This Sly Dust Collector consists of four dust filters, two classifiers, two combination spark arresters and classifiers, and three fan houses, as shown in the sketch. It does a thorough job of exhausting all dust created by cleaning and polishing operations.

Sly Dust Filters offer certain exclusive advantages which help enormously in efficient operation:

- (1) Greater filtering capacity because of more filtering cloth
 - (2) Taut bags (patented) save power and improve dust removal
 - (3) Bags more easily replaced
 - (4) Automatic control (any degree) minimizes or entirely removes the human factor
 - (5) Simpler shaker mechanism results in savings in maintenance and operation
- Write us fully. We shall analyze your situation and tell you exactly what can be accomplished. Sly Dust Control pays for itself.

SLY

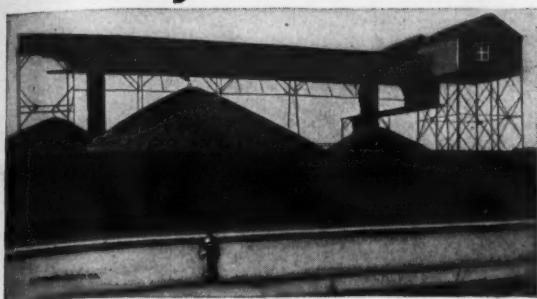
THE W. W. SLY MFG. CO.
4754 Train Ave., Cleveland, Ohio

INDUSTRIAL DUST CONTROL

When inquiring specify CEP5429 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

Coal Storage now War Business



All government departments urge ample coal storage NOW — to relieve transportation, reduce manpower in mines, prevent interruption of industrial production.

Coal Storage is a Gifford-Wood Specialty

Such important problems as segregation, breakage, slackening, spontaneous combustion and related considerations are old stories to GIFFORD-WOOD. Most of the outstanding retail coal storage plants in the East are Gifford-Wood designed and produced. So, also, are many important industrial coal storage as well as coal and ash handling plants.

If you have a coal storage plan under consideration, save time, work and money by calling in a G-W engineer.

GIFFORD-WOOD CO.

HUDSON, N. Y.

420 Lexington Ave., New York

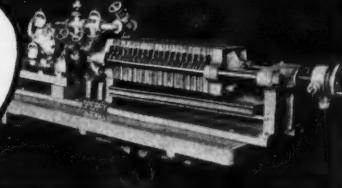
565 W. Washington St., Chicago

④ 2482

When inquiring specify CEP5430 — see information request blank, pgs. 2-3

Built
to do the job
as
YOU
WANT IT
DONE!

SPERRY FILTER PRESSES



During the 45 years since the first Sperry Filter Press was built we have been confronted with problems relating to practically every known type of industrial filtration. And we've solved them — even the toughest of them — producing the equipment to meet the most rigid requirements. So — no matter what your filtration problem may be, you'll find it to your advantage to consult Sperry. Our engineers will gladly make a study of the situation and submit unbiased recommendations without obligation.

Ask for
the New
Sperry
Fact
Book

D. R. SPERRY & CO., BATAVIA, ILLINOIS

Filtration Engineers for over 45 years.

Eastern Sales Representative
HENRY E. JACOBY, M. E.
205 E. 42nd St., New York
Phone MUrray Hill 4-3581

Western Sales Representative
B. M. PILHASNY
Merchant Exchange Bldg.
San Francisco, Calif.

When inquiring specify CEP5431 — see information request blank, pgs. 2-3

PRODUCTION

the reclaimer, the incoming oil is guided by a direction baffle to the bottom of the reclaimer. It is dispersed outwardly to the sides which causes desludging or separating impulses to be created immediately. This incoming flow of oil coming in contact with a specially designed breaker, is further broken apart, bringing the dirt, metal particles, sludges and water downward into the reclaimer. The heavy sludge material is bounced, rolled and scrubbed and breaks apart additional light oils from the dirty materials and these light oils float to the surface. Dirt, metal particles and water are directed in the inclined bottom towards a collection sump where it can be withdrawn. Meanwhile the light oils flow in a separate stream to a compartment where the fine particles of carbon and sludge are removed by a filter process. After passing through the filter the reclaimed oil flows into a storage tank.

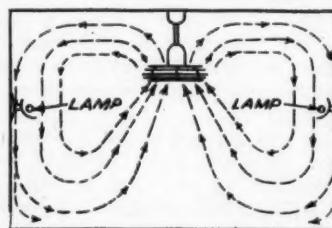
Description — Equipment consists of receiving tank, collection sump for holding and easily disposal of removed sludge and dirt, reclamation oil tank and numerous required piping, valve, vent and outlet connections. Related equipment for clarifying coolant and cutting oils are also available.

GALE OIL SEPARATOR CO., Dept. CEP, Chrysler Bldg., New York, N. Y.

When inquiring specify CEP5432 — see information request blank, pgs. 2-3

Fan Carries Air to Germ Killing Ultra-Violet Ray Lamp

Cold storage and processing room atmosphere thoroughly sterilized



FAN . . . circulates air and increases effectiveness of sterilizing lamps

installed. Also used successfully in distributing germicidal vapors.

Features — Thorough circulation of air breaks up dead air pockets in areas where rays of the lamp do not penetrate.

Description — Fan is designed to force free air up at high velocity, creating an expanding turbulence of lower velocity and increasing volume. Air flows along the ceiling, down the walls and up the center again. For large installations, a battery of fans, properly placed and spaced is suggested. In addition to ceiling installed type, the fan is also offered in a low stand model quickly adjustable to vertical or horizontal operation. Pull chain switch. Three speeds, 1650, 1350, 950 RPM. AC, 110 volts, 60 cycle. Easily attached to ceiling with resilient mounting. Descriptive Bulletin 226 available on request.

REYNOLDS ELECTRIC CO., Dept. FEP, 2650 West Congress St., Chicago, Ill.

When inquiring specify CEP5433 — see information request blank, pgs. 2-3

Uniform Separation

The new model GAYCO Centrifugal air separator makes possible the uniform and increased recovery of cement and other extremely fine materials within a range of 60 to 400 mesh.

- Greater Capacity
- Cleaner Trailings
- 99% Through
- 325 Mesh
- 25% to 30% greater recovery of fines.
- Not affected by variation in speed or rate of feed.



Manufacturers also of "Reliance" Crushers, Screens, Elevators, Conveyors, Bin Gates, Grizzlies. Complete crushing, screening and washing plants for crushed stone, sand and gravel.

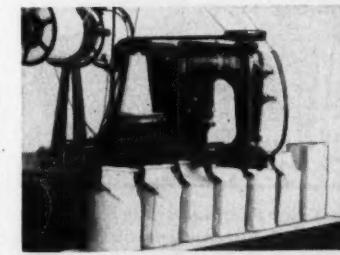
Universal Road Mach'y Co.

Rubert M. Gay Division 117 Liberty St. New York, N. Y.

Canadian Representative: F. H. Hopkins & Co., Ltd., Montreal

When inquiring specify CEP5434 — see information request blank, pgs. 2-3

SOLUTION for many of Today's Packaging Problems



HERE is a packaging set-up that rates high in meeting many of today's requirements.

- ELIMINATES USE OF SCARCE MATERIALS.
- REQUIRES MINIMUM ADDITION OF NEW MACHINERY.
- EASILY ADAPTABLE TO MANY EXISTING CONVEYORS AND PRODUCTION LINES.
- CUTS PACKAGE SHIPPING WEIGHTS AND SPACE REQUIREMENTS.
- SIMPLE TO OPERATE. HIGH PRODUCTION RATES. NEAT, DURABLE PACKAGES.

The machine (shown above) is Union Special sewing head Style 60000 C, fitted to apply narrow reinforcing tape on each side of top of bag and equipped with an automatic trimmer for top of bag and an automatic cutter for severing tape between bags.



UNION SPECIAL MACHINE CO.

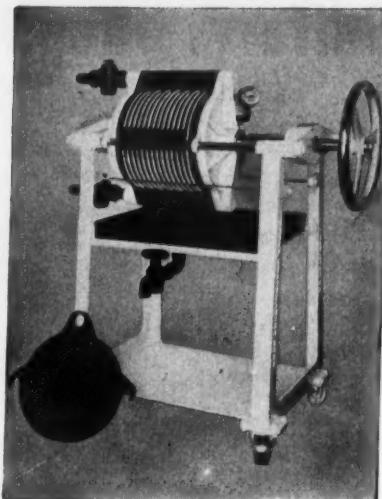
442 North Franklin Street

Chicago, Illinois

When inquiring specify CEP5435 — see information request blank, pgs. 2-3

USE
ERTEL
HARD
RUBBER
FILTERS

for
solutions
that
react
with
metal



Our years of specialization in liquid handling equipment are your guarantee of safe, ACID PROOF filtration. The hard rubber design of this unit eliminates contact with metal at any point in the circulatory system. Built in sizes from 5 to 30 gallons per minute for use with Ertel neutral asbestos filter sheets.

Write for Catalog and Particulars

ERTEL ENGINEERING CORP.

Manufacturers of Liquid Handling Equipment
KINGSTON, NEW YORK

New York Sales Office & Showroom . . . 40 W. 48th St.

When inquiring specify CEP5436 — see information request blank, pgs. 2-3



If yours is a process that requires drying or the handling of materials in controlled atmospheres, you need Kathabar. Kathabar Moisture Control Systems regulate humidity accurately by automatically removing moisture from the air or adding to it. Kathabar operates independently of heating and cooling. It uses a minimum of critical materials and is available now to vital industries.

SURFACE COMBUSTION • TOLEDO, OHIO

[Write for free bulletin giving facts
and figures, describing Kathabar.]

Kathabar
SC

CONTROLLED ATMOSPHERES

When inquiring specify CEP5437 — see information request blank, pgs. 2-3

• • • IDEAS • • •



FIBRE-BODIED CONTAINERS . . . closely resemble tin cans they are designed to replace

Fibre Cans Formed, Lithographed on Standard Tin Can Machinery

Process to be available to entire industry as solution of problems of dry product packers formerly using tin containers

A method for making fibre-bodied containers on machines that have regularly been used for the manufacture and lithographing of metal cans has recently been announced by the American Can Co., New York, N. Y. This new method, which will be made available to the entire industry, as soon as perfected by actual production, is said to offer a solution to the can problems of manufacturers of dry products. Restrictions on tin have resulted in packaging difficulties that have many angles involving production and merchandising.

One of the merits of the new method is that it requires no new machinery, the containers being processed by practically the same procedure as that used in making tin cans. Particularly advantageous to those who may adopt these containers as substitutes for tin cans is that they may be used on present packaging equipment. Also, resemblance to former cans is so close that customer appeal and continued ready identification is completely retained.

The fibre, cut to sheets of tin plate size, lithographed on the regular presses formerly used for lithographing designs on tin plate, will then be sheared and formed into bodies. Ends will be seamed on with the seaming machinery now in use. The supply of these containers will be determined by the capacity of the company and any other sources in the industry that may avail themselves of the process and the amount of black plate that can be secured to make ends.

Paper Paint Cans Demonstrate Merit in Extensive Tests

No tin at all required, tops and bottoms made of alloy plate discs

Paper paint cans are among the latest developments in the program to find efficient and inexpensive substitutes for vital materials such as tin. The new container is the



NEW PAPER PAINT CAN . . . with and without label — showing construction

result of several months of experimentation at the Chicago plant of the Sherwin-Williams Co. is made entirely of cardboard impregnated with an insoluble substance, except for metal discs which form top and bottom. Even these discs use no tin, being made of an alloy coated plate and further experimentation underway may result in the complete elimination of the use of alloy plates and permit tops and bottoms to be made from lacquered black plate.

The biggest problem in developing this paper paint can was to find a method of moisture-proofing the cardboard. The familiar type of container used for ice cream and other products would soak up the solvents in the paint and result in a soggy can and deteriorated contents. This obstacle was overcome by chemically treating the cardboard and placing an impregnated paper lining on the inside to prevent "wicking" or absorption. While the new paper can carries on its label, "War Emergency Container — Handle With Care," it has been tested extensively for "wicking", for evaporation and for storage and shipping qualities and proved entirely satisfactory.

Inside diameter of the new container is slightly less than the all-metal type because walls are thicker. Height has been increased to compensate for this and for the generous "bite" with which the ends clamp on the body. Quart size is now in production and half-pint and gallon sizes will also be manufactured.

Device Weighs Oxide Films to Ten Billionths of an Ounce

Plays part in research to find new ways to combat erosion that costs 200 million dollars a year

To find out how oxygen combines with metals, and how fast, Dr. Carl A. Gulbransen of Westinghouse Research Laboratories, Pittsburgh, Pa. is weighing oxide films, or rust, with a tiny weighing machine so sensitive it measures its load in weight units of ten billionths (10/1,000,000,000) of an ounce. The purpose of this research is to find new ways to protect steel and other metals against the destructive action of oxygen in the air.

This special weighing machine is sealed in a glass tube and takes measurements on pieces of metals half the size of a razor blade. The balance, about six inches long and an inch square is inclosed in one arm of a glass tube in the shape of a cross. Moving arm of the balance is a

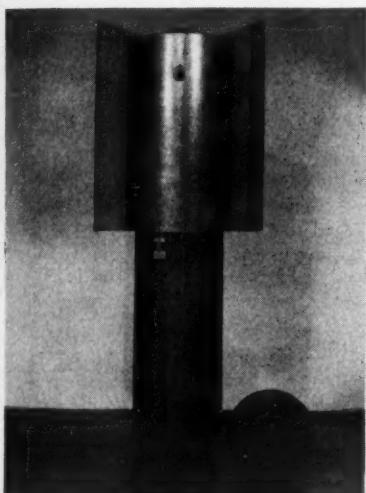
piece of quartz six inches long and a sixteenth of an inch in diameter. It is supported in the middle like a see-saw by a fine piece of tungsten wire which is stretched across a framework made of quartz. Quartz is used because it has less expansion than other materials when heated.

From one end of the moving beam the sample piece of steel is suspended on a two foot piece of tungsten wire inside the vertical part of the glass tube. A counter-weight with the same weight as the sample is hung on the other end of the beam. The sample is polished and washed three times before it is placed in the tube but brief contact with the air forms several layers of oxide. The tube is sealed and the air removed by vacuum pumps. Final cleaning is done with hydrogen, a small amount being piped in from a pressure tank. Hydrogen combines with the oxygen on the surface of the sample to form free water vapor which is then pumped out of the tube.

To start the experiment, a small amount of oxygen is admitted to the tube from another tank. The sample gets heavier as the oxygen combines with the surface layers of the steel, swiftly at first and then slowly. Movements of the balance's pointer so minute that they can be observed only through a microscope reveal the weight added to the sample of steel by a single layer of oxygen atoms. One layer of atoms is about ten billionth of an inch thick. Changes in weight are recorded every few minutes.

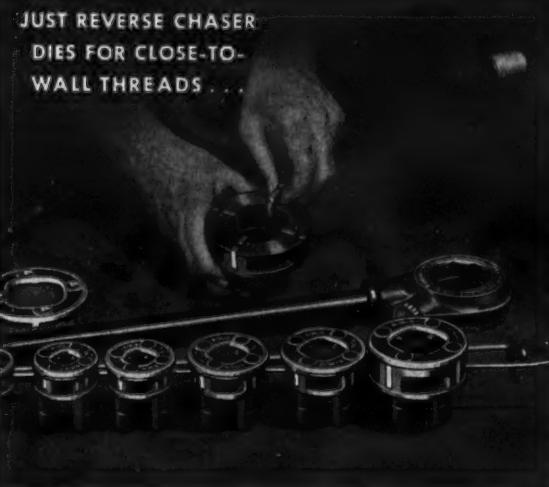
Inexpensive Water Tank Jacket Employs Air-Cell Insulation

Material quickly applied, joint seals secured by long lasting cloth tape



JACKET . . . improves heater performance one on all standard model thirty and water tanks to provide quicker heating retention. These five-ply air cell jackets have been given rigid laboratory tests for all service requirements and in each case performed efficiently.

In applying these hot water tank jackets, joints are made quickly and with complete security by means of long lasting cloth tape. The tape is furnished in colors to match the attractive wood grain, green and gray finishes which are available.



Quicker Threading of small pipe with this handier

RIGID Ratchet Die

Minutes are important now — and this remarkable steel and malleable RIGID No. 11R saves them for you. Die heads push out easily for changing, snap in from either side, can't fall out. Alloy steel chaser dies are quickly removed for regrinding or reversed for close-to-wall threading; no special dies needed; cut smooth perfect threads. Electrical conduit dies at regular die prices. Convenient carrier free with complete sets, sizes $1/8$ " to $1\frac{1}{4}$ ". Also available in 3-way Die Stocks. Ask your Supply House for this faster easier RIGID.



Give yourself smoother cleaner threads with RIGID (Ridge-oil) — penetrates quickly, cools, lubricates. It's antiseptic, won't congeal above 20° F. Sulphur-lard base, Dark and Nu-Clear, quarts to 55 gallon drums. Buy it today — and save threader dies and cutter blades.

All RIGID Pipe Tools are sold through Supply Houses

RIGID

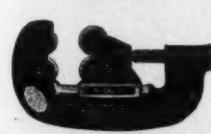
Pipe Wrenches, Cutters, Threaders, Vises

Work-Saver Tools for America's Big Job in 1942

Work-Saver RIGID CUTTER rolls easily through any pipe



RIGID No. 1 and 2 Heavy Duty Pipe Cutter



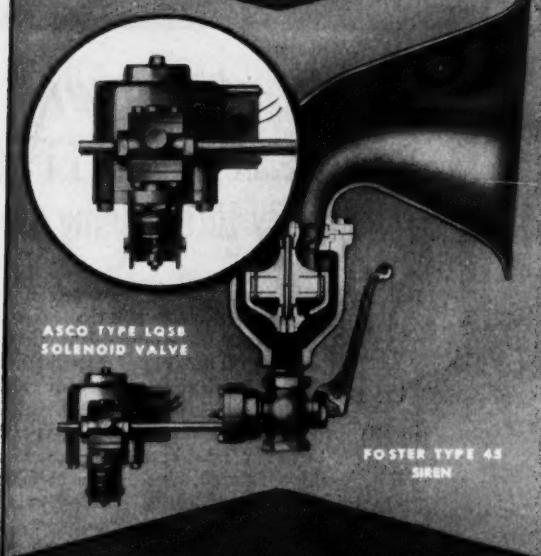
No. 42 for Tight Places

This new 4-wheel trench-type cutter gives you faster cutting, has a short handle for easier use in close quarters. Powerful RIGID construction.

THE RIDGE TOOL COMPANY
ELYRIA, OHIO, U.S.A.

When inquiring specify CEP5438 . . . see information request blanks, pgs. 2-3

**TODAY . . . when even
Seconds "out of service"
count as never before—more
and more manufacturers are
installing ASCO Valves for
performance—plus!**



a typical case...

on this air raid warning siren where valve failure may mean loss of life this ASCO Valve is used by the siren manufacturer—the Foster Engineering Company.

If you...

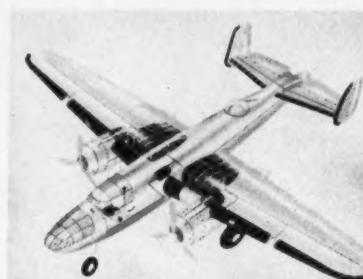
have a perplexing problem involving the automatic or remote control of steam, air, liquids, or gases, tell us what you wish to accomplish. There are more than fifty types of solenoid valves in the complete line of Asco Valves...one of them will meet your requirements. Write for Catalog 147.

Automatic Switch Co.

47 EAST 11th STREET, NEW YORK, N.Y.
TELL US WHAT YOU WISH TO ACCOMPLISH

When inquiring specify CEP5439 — see information request blank, pgs. 2-3

**Film Tells Story of Rubber and Gives
12 Basic Rules for Tire Care**

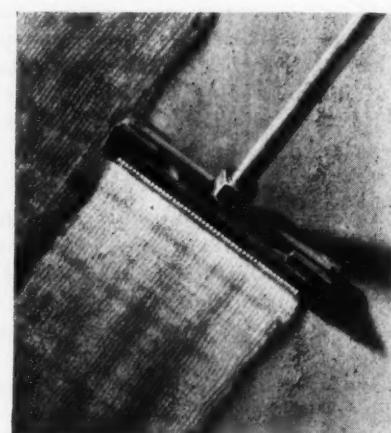


SHADED PORTIONS IN THE DRAWING indicate the use of rubber.

thing that rolls. Scenes of army motorized equipment are of particular interest and rubber's part in industry is also emphasized. A portion of the film is devoted to the manufacture of Ameripol, the company's synthetic rubber. Available upon request to clubs, civic organizations and trade groups in 16 millimeter size. It runs 25 minutes.

**Oxy-Acetylene Priming of Steel
Conditions Surface for Painting**

Flames applied by heating head make rust and scale expand and pop-off structural steel-work, tanks, piling and pipe lines



HEATING HEAD . . . used in
flame priming steel

fully described in an article in a recent issue of the "Bakelite Review," issued by Bakelite Corp. (Unit of Union Carbide & Carbon Corp.) 30 East 42nd St., New York City.

The article explains the ease and economy of applying flame priming, the resulting high quality of the treated surfaces which are left warm and dry for the prime coat

of paint. When the flames are applied rust and scale expand and pop-off and the metal underneath is left relatively unaffected. The system is enjoying wide use on structural steelwork, storage tanks, piling and pipe lines. The process not only improves corrosion resistance but also increases cleaning and painting rates and reduces setting time for the paint. Also painting can be carried out under conditions of low temperature or dampness that would normally cause delays. Studies of the action of paint on warm surfaces indicates that the heat, in effect, thins the paint and lowers the surface tension. The heating head used to apply these flames has forty-nine flame ports spaced $\frac{1}{8}$ in. apart, giving a 6 in. flame coverage. Flame ports are No. 75 drill size or 20 thousandths of an inch in diameter. Despite the extremely small port diameter, the flames are over $\frac{1}{4}$ in. long indicating the high velocity of the burning gases which have a 1 to 1 ratio between oxygen and acetylene. Head can be attached to blow pipe or to an extension arm and connected in turn by hose to oxygen and acetylene supplies.

Silver Coatings by Vaporization

Use with transparent plastics and glass reflectors are typical

A number of new applications of silver coatings applied by vaporization methods have been found recently which offer advantages as substitutes for scarcer materials and relatively low cost. The American Silver Producers' Research Project, New York, N. Y. reports that a coating only 5 millionths in. thick is substantially opaque and possesses high reflective ability. Application on transparent plastic sheeting has possibilities and such coatings have brilliant lustre when viewed through the plastic, making the sheeting applicable, in some cases, in place of aluminum and tin foils.

Transparent molded plastic coated on the under side or inside with a thin silver film can be given the appearance of silver and yet be light in weight and have the other properties of plastic. Reflectors, especially those of glass are now being coated with silver, especially where the surface is subject to and kept under high vacuum as in vacuum bottles. Silver can be coated onto refractories having dielectric properties to form condensers.

**Prompt Return of Cylinders Is Big Factor
In Supply of Oxygen and Acetylene**

All users of oxygen and acetylene are urged to return all empty cylinders and to estimate their requirements carefully so that only enough to meet immediate needs is ordered. The cylinder supply is the most important factor in meeting the great demand for compressed oxygen and dissolved acetylene. In calling attention to the need of such cooperative effort, Linde Air Products, unit of Union Carbide & Carbon, New York City, points out that many shops allot not more than three oxygen and three acetylene cylinders to every two cutting or welding outfits in active service. Cylinder supply is deemed fully adequate if cooperation is forthcoming.

American Industry stands FIRM on Dayton Safety Ladder and Ladder Shoes

DAYTON UNIVERSAL LADDER SHOE
Easily installed on your present straight ladders. Prevents slipping — guarantees additional safety for workers. Your choice of Rubber Suction Grip Treads or Suberac Cork Treads. Shoe is instantly converted by flip of hand or foot for either inside use of Treads or outside use of tempered steel spike Toes.

DAYTON SAFETY LADDER
These famous ladders save time — provide supreme Safety. Ordinary ladder hazards are eliminated. Nationally used by Industry, these Dayton Safety Ladders give confidence to workers. Features a broad platform with ample room for both worker, tools and supplies. Rigid steel supports, tested airplane spruce assure great strength, stability, lightness of weight. Equipped with Standard Rubber Safety Shoes at no extra cost.

Write today for prices and free catalog

The DAYTON Safety Ladder Co.
121-123 W. Third St.
CINCINNATI, O.

As Safe as Standing on the Floor

When inquiring specify CEP5440 — see information request blank, pgs. 2-3

If the tubing will carry the pressure

ERMETO WILL HOLD IT

★
NO FLARING THREADING WELDING OR SOLDERING

Here is the Safety Joint

★ Weatherhead Ermeto Safety Tube and Pipe Couplings answer the problem of connecting tubing without the necessity of flaring, threading, welding, or soldering.

With Ermeto Safety Fittings, connections can be made with practically all types of tubing materials. These connections will hold up beyond the burst strength of the tube itself. Exhaustive tests have also proved the superior qualities of Ermeto in the ability to withstand vibration without loss of tightness of the joint.

Ermeto fittings have wide applications on hydraulic lines, oiling, water, gas, fuel and air lines.

Write for samples and complete details.

THE WEATHERHEAD CO., 300 E. 131st Street, Cleveland, Ohio

WEATHERHEAD
TUBE FITTINGS • FLEXIBLE HOSE • VALVES • DRAIN COCKS
AVIATION, AUTOMOTIVE AND REFRIGERATION SPECIALTIES

When inquiring specify CEP5441 — see information request blank, pgs. 2-3

PRODUCTION



SAND AND WATER BARREL UNITS . . . easily rolled or carried for air raid fire fighting

Portable "Air Raid" Barrel Pump and Sand Barrel Units

Provides ever-ready means of fighting incendiary bomb fires

Uses — Designed to provide portable units that can be moved quickly to required location to extinguish fires caused by aerial incendiary bombs.

Features — Capacities provide generous supply of both water and sand in containers that are easily handled. In addition to strong, free rolling wheels, both barrels are furnished with comfortable, sure grip handles for carrying these units up and down stairs.

Description — Barrel pump extinguisher consists of a twenty gallon barrel, mounted on wooden wheels. It has a water-tight hinged cover through which is fitted a stirrup-type pump. To this is attached twelve feet of hose with adjustable spray nozzle. Fire ax is attached to side of barrel. Carrying handles securely bolted to sides. Sand barrel has approximate capacity of approximately two and one-half cubic feet. Its auxiliary equipment includes ax and shovel with extra long handle. Both barrel units are painted a bright yellow with black lettering, "For Air Raid Use Only." Luminous letters at extra charge.

SPECIALTIES MFG. CO., INC., Dept. CEP, 35 Farand St., Bloomfield, N. J.

When inquiring specify CEP5442 — see information request blank, pgs. 2-3

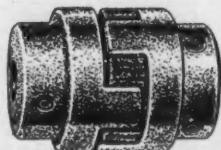
Industrial Fluorescent Lighting Units

Units and accessories adapted to a wide range of fluorescent lighting applications in industrial plants, buildings, offices and engineering departments are described in a recently issued bulletin. Description emphasizes exceptional flexibility in installation either as individual units or continuous application and conveniently providing for additions and extensions by simple interconnecting fittings. The fittings and hangers provide for installation either suspended from or attached to ceilings. Listed by Underwriter's Laboratories. Bulletin FL 5 together with a price list FL-5-CI available on request.

WIREMOLD CO., Dept. CEP, Hartford, Conn.

When inquiring specify CEP5443 — see information request blank, pgs. 2-3

PERFECTION
MAY
DEPEND ON
ONE
INGREDIENT



PRODUCTION may depend on ONE unit in the power line

**L-R
FLEXIBLE
COUPLINGS**

CORRECT MISALIGNMENT, absorb shock, vibration starting torque, intermittent overloads, **SAVE SPACE** Assure smooth, even quiet flow of power. No lubrication. No servicing.

Special Cushions for Resistance to chemicals — oil, heat, gases. Ask about L-R coupling equipment for chemical plants.

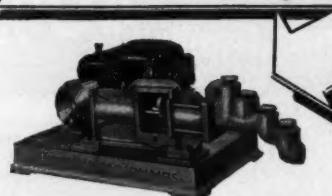
L-R Type "IA" for small machines, pumps, speed reducers, motor driven processing equipment, etc.; consists of only 3 parts — 2 metal jaw bodies and resilient load cushion. Bores $1/2$ " to $2\frac{1}{4}$ ", for 2 to 40 H. P. at 1750 R. P. M. Other types and sizes to $16\frac{1}{4}$ " bores, to 2500 H. P.

Handy Selector Charts with L-R Catalog enable you easily to select L-R Couplings you need from L-R complete line. Write.

LOVEJOY FLEXIBLE COUPLING CO.
4976 W. Lake St.
Chicago, Ill.

When inquiring specify CEP5444 — see information request blank, pgs. 2-3

This is the Step-Valve



... that Pumps Liquid Latex, Salt Slurries, Acid Sludge, Other "Difficult" Materials

Try Milton Roy Pumps for those "impossible" jobs . . . you'll be amazed at the way the patented Step-Valve handles them, without clogging or air-binding. Use Milton Roy Pumps for accurate volume control, from one quart to 2600 gals. per hour; for pumping against high pressures, up to 20,000 lbs. per sq. in.; for pumping light solvents as well as heavy, viscous materials; for practically all chemical services.

These pumps are simple, rugged, with few moving parts, built-in integral-gear motors and adjustable stroke from zero to maximum capacity (while operating if desired) for precise volume control. For description of Simplex, Duplex and Special Types, specifications of entire line and complete information, write for Catalog 941.

We are still making prompt deliveries of most standard units. If we can help in your war effort 'phone or wire.

MILTON Roy PUMPS

1310 E. MERMAID AVE., CHESTNUT HILL, PHILA., PA.

When inquiring specify CEP5445 — see information request blank, pgs. 2-3

STAINLESS STEEL
MONEL... NICKEL
Valves.. Fittings.. Castings

Resistant to
CORROSION, HEAT
AND ABRASION

Cooper offers you a complete foundry and machine shop service. This modern plant can fulfill your most difficult casting requirements . . . in sizes from one ounce to two tons . . . in stainless steel, monel, nickel and many special alloys . . . rough, polished or fully machined.

A complete line of stainless steel valves and fittings are carried in stock.

LUSTRACAST
BRILLIANT FINISH

Our exclusive electrolytic polishing process leaves all surfaces and crevices, inside and out, bright and clean.

THE Cooper ALLOY FOUNDRY CO.
150 BLOY STREET • HILLSIDE, NEW JERSEY

When inquiring specify CEP5446 — see information request blank, pgs. 2-3

How Capacitors Increased
Electric System Capacity **40%**

The Geometric Tool Company of New Haven, Conn., was confronted recently with an electric power problem such as you may have today. It wished to add more equipment without installing larger wiring. Investigation showed that the distribution system was clogged with reactive (nonworking) kva. To neutralize this reactive kva, and make room for more working current, capacitors were installed. **The results:**

1. The capacity of the feeder was raised from 223 to 312 kw, a boost of 40%.
2. Voltage at the load was improved, and heating in the feeders was reduced.

Find out today if your power factor is such that G-E Pyranol capacitors will enable you to add equipment in your plant without rewiring. Ask your G-E representative, or:

WRITE FOR BULLETIN GEA-77L
GENERAL ELECTRIC, SCHENECTADY, N.Y.

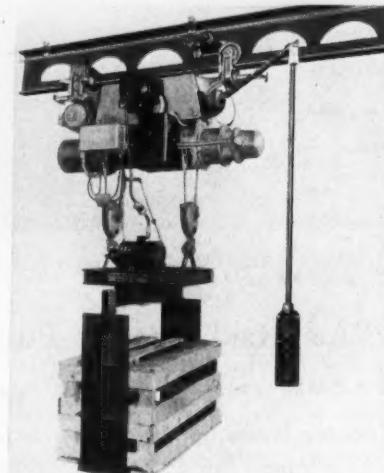
GENERAL ELECTRIC

When inquiring specify CEP5447 — see information request blank, pgs. 2-3

PRODUCTION

Motor-Driven Crate Grab & Crane
Operated by Push Button Station

Stacks and removes crates and boxes at great height with safety



MOTOR DRIVEN GRAB . . . with push button control

Uses — especially designed to handle crates and boxes in or out of storage or from one elevation to another. For quick stacking and removal of crates at a great height with safety.

Features — All operations completely motorized and conveniently controlled by push button station. Increases storage capacity.

Performance — Unit described will handle one or more boxes at a time. It will lift loads up to 1500 lbs. a distance of 20 ft. Arms can be spread to a maximum of 36 in. and retracted to a minimum of 18 in.

Description — Arms of the grab are extended or retracted by means of geared slide bars that are driven by the motor mounted on top of the grab. Power is supplied to this motor by means of a flexible cable that is held taught by a spring type retrieving reel. Double hook type cable electric hoist elevates and lowers grab with very little swing, making it easy to spot it as desired. Electric brake stops and holds load. Unit available with operators cab in which controls may be located.

CLEVELAND CRANE & ENG. CO., Dept. CEP, Wickliffe, Ohio.

When inquiring specify CEP5448 — see information request blank, pgs. 2-3

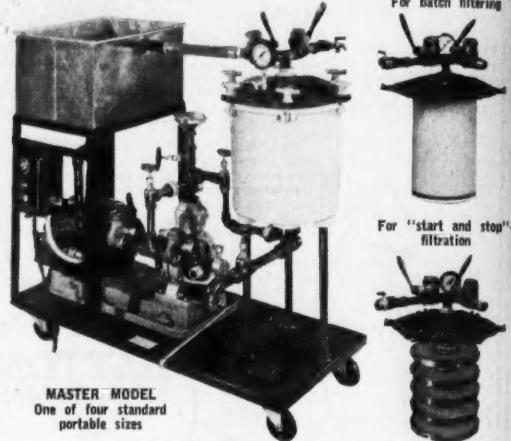
Reciprocating Tool Does Many Jobs
Applications include sawing, sanding, honing, filing; tedious and costly hand labor is eliminated

Uses — For intermittent operation or continuous production in filing, snagging, polishing, honing, sawing and even light chipping operations.

Features — Produces push or pull power ranging from 6 lbs. to 40 lbs. Does not take the place of power tools now in use, but can be used in most plants to eliminate slow, tedious and costly hand methods. Head is oil sealed to motor and runs in a continuous bath of oil. Motor is ball bearing; bearings are packed for life and require no attention. An oversize fan gives it the coolest operation practical. Senior models can readily be clamped in any position, providing a flexible filing machine for all types of work. The work can be brought to the tool, thus eliminating the time necessary to clamp work in a stationary position on many burring operations. The

**A New Approach
to FILTRATION PROBLEMS**

For many industries requiring the filtering of small batches or large gallonage of liquids, LeVal Filters offer a great improvement over methods requiring wire screens, cloth, paper or pulp. LeVal filters clean by back-washing without opening or dismantling the filter. Use low-cost filter aids. Write today for Bulletin 94 giving full details.



LEVAL FILTER COMPANY
1319 So. Michigan Ave., Chicago, Ill.

When inquiring specify CEP5449 — see information request blank, pgs. 2-3

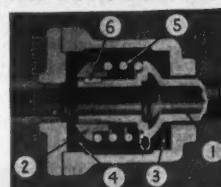
MORE SPEED?

LOOK TO YOUR STUFFING BOXES

If you are looking for more production from dry cans, slashears, calenders, mills, irons, or similar machines, don't overlook the Johnson Rotary Pressure Joint. Your old stuffing boxes and steam fits may be as good as they ever were. But, compared to the Johnson Joint, they waste valuable time, slow up production, and demand a lot of unnecessary care and attention.

The packless, self oiling, self adjusting, and self aligning design of the Johnson Joint is shown below. It puts an end to all stuffing box troubles, thereby eliminating many causes of machinery shutdown. More than that, it introduces modern, more efficient methods of draining rolls and drums, through the same head that admits the steam. 50,000 installations, in less than ten years, show how rapidly, how effectively, the Johnson Joint is replacing the old stuffing boxes and steam fits.

THE JOHNSON ROTARY PRESSURE JOINT



— for Dry Cans, Calenders, Ironers, Mills, and similar machines with steam or liquid filled cylinders. Nipple (1) fastened to roll or drum. Sliding collar (2) keyed (6) to nipple. Carbon graphite seal ring (3) and bearing ring (4). Spring (5) for initial seating only.

Write for bulletin

Product of The Johnson Corporation

126 WOOD ST., THREE RIVERS, MICHIGAN

When inquiring specify CEP5450 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW

PROVED COMFORT... ...PROVED PROTECTION

AGAINST
LIGHT CONCENTRATIONS
OF TOXIC OR IRRITATING
GASES AND VAPORS

THE M-S-A
Comfo
CHEMICAL
CARTRIDGE
RESPIRATOR



Lightweight, easy-fitting protection against light concentrations of organic vapors and acid gases encountered in industry—complete comfort and safety in paint-spraying operations! This versatile respirator is an outstanding favorite for top performance under exacting conditions—simple to maintain and keep clean, with twin, long-lasting chemical cartridges that are quickly replaceable, and offer very low breathing resistance. Write for Bulletin EM-3!

MINE SAFETY APPLIANCES CO.

Braddock, Thomas and Meade Streets • PITTSBURGH, PA.
District Representatives in Principal Cities

When inquiring specify CEP5451—see information request blank, pgs. 2-3

How to speed WAR WORK IN THE OFFICE



Fluorescent with
the Wakefield ACE

This label tells you it's
checked and certified
by Imperial E.T.L. →

The ACE is "tops" for office space. Puts 90% of its light down on desk tops to help eyes and hands work faster, more accurately, with less strain. And it's an "ace" for office space with poor ceilings, too. Trim and functional in design. Maintenance cost is low. Easy to clean and relamp. And it's a Certified FLEUR-O-LIER, checked and certified by Electrical Testing Laboratories. Write for details.

Fluorescent lighting now requires a specified priority rating. Our experience on this is at your service.

THE
F. W. WAKEFIELD BRASS CO.
92 CHEMICAL PARK
VERMILION, OHIO

When inquiring specify CEP5452—see information request blank, pgs. 2-3

PRODUCTION

tool will saw thin, soft metals and sheet metals in operations such as inside cuts and contours on panel work, before or after installation.

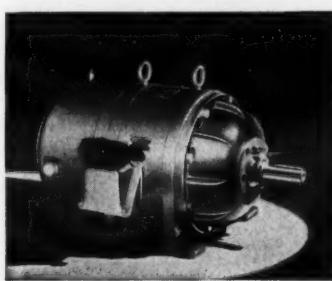
Description — Gears are of special bronze, chuck spindle bearings of composition bronze, all working parts of hardened and polished steel. Junior series has round chuck capacity of $\frac{1}{8}$ ", overall length of 8", push or pull power of 6 to 10 lbs. Senior series has round chuck capacity of $\frac{1}{4}$ ", overall length of 10", push or pull power of 30 to 40 lbs. Junior series motors manufactured by Delco Remy; Senior by Robbins & Meyers. All models give 1200 to 1400 strokes per minute with full load. A full line of accessories, including files, hones, diamond laps, saws, polishers, steel and wood chippers and others, is available for both general and specific operations.

H & H RESEARCH CO., Dept. CEP, 12540 12th St., Detroit, Mich.

When inquiring specify CEP5453—see information request blank, pgs. 2-3

New Motors for Operations Where Magnesium Dust Hazards Exist

Sizes from 1 to 20 horsepower, totally inclosed polyphase induction motors



MOTOR . . . withstands magnesia dust hazards

Features — Non-sparking bronze external fans, relatively straight and smooth external ventilating passages (for fan cooled motors) to facilitate cleaning, permanently sealed in leads and rotating labyrinth seal at shaft opening.

Performance — Design of motors is based on series of tests recently initiated by the manufacturer at the Underwriters' Laboratories, Inc. in which a sample 15-horsepower, 1800 RPM motor was subject to a cloud of fine magnesium dust while operating under heating and cooling cycles simulating several years' operation in an industrial plant. Careful examination of the motor after these tests indicated that it has successfully withstood them.

Description — This new line of polyphase induction motors is offered in sizes from 1 to 20 horsepower, NEMA frames 203 to 326 inclusive. These motors are totally inclosed with a non-ventilated construction in the smaller ratings and a fan cooled construction above 2 horsepower. Simple cast-iron end shields, stator frames and fan housings make possible dust tightness without complicating assembly or disassembly.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N. Y.

When inquiring specify CEP5454—see information request blank, pgs. 2-3

STOP LOSSES

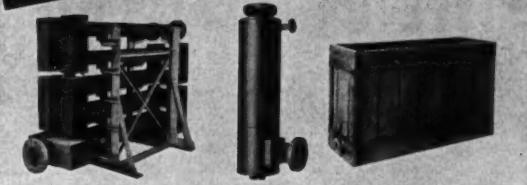
IN EQUIPMENT DESIGNED FOR
PRODUCTION OR USE OF

Hydrochloric Acid

BY USING

NATIONAL AND KARBATE
CARBON AND GRAPHITE MATERIALS

FOR THE CONSTRUCTION
OF PROCESSING UNITS



WRITE FOR BULLETIN NO. M-8800-A

NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

UCC

CARBON SALES DIVISION, CLEVELAND, OHIO

General Offices: 30 East 42nd St., New York, N. Y.

Branch Sales Offices: New York, Pittsburgh, Chicago, St. Louis, San Francisco

When inquiring specify CEP5455—see information request blank, pgs. 2-3

24 HOURS A DAY

if
necessary

Let ForgeWeld Bear The Extra Burden

Food wins battles just as surely as bullets. Under the extra burdens of feeding the growing appetites and pocketbooks of a hard-working Nation, make ForgeWeld Casters carry your trucks and portable equipment for you.

Users by the hundreds, of ForgeWelds BY THE THOUSANDS, now are proving this drop-forged steel, light swiveling unit can take what Industry is dishing out. Write for the circular with full specifications, types and sizes.

SERVICE CASTER & TRUCK CO.

790 N. Brownwood Ave., Albion, Mich.
Eastern Factory: 430-32 Somerville, Ave., Somerville (Boston), Mass.
Toronto, Canada: United Steel Corporation, Ltd., SC&T Co., Division.



ForgeWeld: Regular Duty to 3,600
lbs. per set . . . Heavy Duty to 6,000
to 8,000. Drop-forged $\frac{1}{2}$ " thick top plate
with integral king pin. Oversize SAE
1045 steel axle with Hyatt bearing.
Swivel ball bearing of twin circles in
hardened raceways. (Brinell 250).

SERVICE

Mobilizers of Industry

When inquiring specify CEP5456—see information request blank, pgs. 2-3



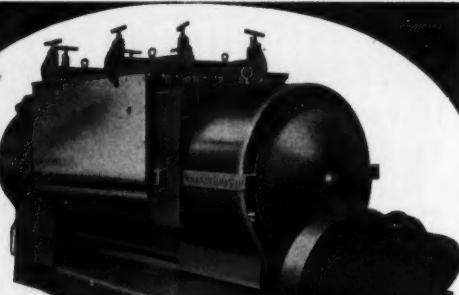
"NATIONAL" CONVEYOR TYPE CHEMICAL DRYER

Installed at one of the modern plants of Foote Mineral Company, nationally known chemical manufacturers, specially designed for the continuous drying of a highly abrasive and corrosive material. Principal advantages: Fast, uniform drying; continuous hopper feed; automatic leveler for even distribution of material on conveyor belt; pressure extraction and heating for pre-drying; drying chamber and delivery completely enclosed to prevent dusting; automatic conveyor belt tension control; low-cost operation and maintenance.

Write for Complete Information

THE NATIONAL DRYING MACHINERY CO.
2709 N. HANCOCK STREET, Philadelphia, Pa.

When inquiring specify CEP5457 — see information request blank, pgs. 2-3



Precision Built
FOR FASTER, LOWER COST
PRODUCTION

The PATTERSON HEAVY DUTY KNEADERMASTER

For intensive mixing and kneading of difficult materials — with outstanding efficiency. Ruggedly built in all sizes — from 1/2-gallon to 5-gallon laboratory models, and 5-gallon to 2000-gallon production machines. Write for descriptive bulletin.

THE PATTERSON FOUNDRY & MACHINE CO.
EAST LIVERPOOL, OHIO, U.S.A.

When inquiring specify CEP5458 — see information request blank, pgs. 2-3

EQUIPMENT FOR PRODUCTION

New Type Wood Fence Replaces Steel for Industrial Use

Provides an efficient and practical war emergency substitute



INDUSTRIAL WOOD FENCE . . . alternates for metal in present shortage

sturdy construction. Weight 20.4 lbs. per lineal foot. A car of this fencing amounts to 2000 lineal feet or 44,000 lbs. Construction details are available upon request.

ROCK ISLAND SASH & DOOR WORKS, Dept. CEP, Rock Island, Ill.

When inquiring specify CEP5459 — see information request blank, pgs. 2-3

Work Glove for Women Combines Light Weight and Durability

Design provides extra margin of safety and snug, cool fit



WORK GLOVES . . . cool open back, protective leather wrist band

gives the operator an extra margin of safety and protection and assures longer wear. A two inch band of leather

uses — For general industrial application where wire and metal have been used this wooden type fence has been designed to provide an efficient and practical war emergency substitute.

Features — Has been approved by Chief Engineer and Provost Marshal of Army Engineering Corps. Description — Fencing is of

sturdy construction. Weight 20.4 lbs. per lineal foot. A car of this fencing amounts to 2000 lineal feet or 44,000 lbs. Construction details are available upon request.

extends up over the wrist to provide protection for that vulnerable spot. Inseam thread sewed. Small, medium and large sizes furnished in pairs, all rights, all lefts or any combination to the dozen pairs desired. This glove is called Women's Work Glove No. 1460.

INDUSTRIAL GLOVES CO., Dept. CEP, Danville, Ill.

When inquiring specify CEP5460 — see information request blank, pgs. 2-3

Materials Handling with Tractor Powered Units

Digging, loading and materials handling equipment is described in an eight-page-two-color bulletin devoted largely to spreads of action photos showing shovels, bulldozers and cranes mounted on caterpillar type tractors handling chemicals, quarry rock, ores, factory clean-up work, brick plant operations. Complete specifications of all models shown are conveniently listed. Bulletin — "Tractor Equipment" is available upon request.

TRACKSON CO., Dept. CEP, Milwaukee, Wis.

When inquiring specify CEP5461 — see information request blank, pgs. 2-3

Electrical Apparatus Maintenance Chart

A three page bulletin briefly listing important maintenance operations and methods serves as a handy means of checking on the care of such electrical apparatus as motors, control equipment, lightning arrestors, wiring, fuses and transformers. Serves as a regular periodic reminder and eliminates overlooking often neglected points. Bulletin A-31203 is available on request.

WESTINGHOUSE ELECTRICAL & MFG. CO., Dept. CEP, East Pittsburgh, Pa.

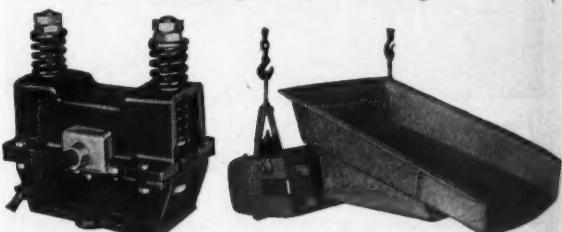
When inquiring specify CEP5462 — see information request blank, pgs. 2-3

You Can't Beat the Combination of **SYNTRON**

"PULSATING MAGNET" VIBRATORS

AND "VIBRA-FLOW" FEEDERS

For Dependable Operating Efficiency and Major Labor Savings.



Vibrators on the bins to keep their contents Agitated and Free Flowing

Vibrating Feeders under the bins to regulate their discharge by rheostat control of rate of flow

Investigate the Many Advantages

SYNTRON CO.

110 Lexington Ave.

Homer City, Pa.

When inquiring specify CEP5463 — see information request blank, pgs. 2-3

PRODUCTION

Twenty-five Ton Standard Speed Ball Bearing Screw Jack

Designed for heavy duty industrial lifting, lowering and skidding work



HEAVY DUTY SCREW JACK

Uses — This twenty-five ton, ball bearing, bevel gear, standard speed screw jack has been especially designed for handling all types of heavy duty lifting, loading and skidding work encountered in various types of industrial plants. **Features** — Workers are offered the utmost protection at all times by the safety features incorporated in the design of this screw jack. The safe precision mechanical action and dependable, easily operated lift provide desirable safeguards.

Description — Screw adjustment and inclosed mechanism combined with both toe and cap lifts make it most suitable for all heavy industrial applications. Toe lift is minimum of 11" from base. However, jacks with toe in any position to suit any requirements are available and the base design can be modified. This model (No. 7300) lifts its full rated capacity of twenty-five tons on cap and twelve and one-half tons on toe. Has full 6 inch lift and weighs only eighty-two pounds complete. Complete information is available upon request.

TEMPLETON KENLY CO., Dept. CEP, 1026 So. Central Ave., Chicago, Ill.

When inquiring specify CEP5464 — see information request blank, pgs. 2-3

Light Weight Insulated Furnace Door with Cam & Lever Handle

Positive locking eliminates infiltration of air between door and frame, improving combustion

Uses — As a furnace access, inspection and clean-out door for boiler furnaces, incinerators and other instances where air-tight, positive locking doors are required, either in building or installing new equipment.

Features — Special insulating material reduces weight of door. Easily operated cam and lever type handle assures tight locking, preventing infiltration of excess air, increasing combustion efficiency.

Description — Designed for use in connection with manufacturer's boiler settings. Made of high quality cast iron. Lined with light weight refractory insulating material which protects the metal from heat and decreases radiation into boiler room. Door opening is 18" wide, 16" high. Frame 27" wide, 24 3/4" high. Door can also be mounted on steel or cast iron plate. Design of frame provides for easy installation. Cannot be used as explosion door. Furnished in right hand opening only.

PLIBRICO JOINTLESS FIREBRICK CO., Dept. CEP, 1800 Kingsbury St., Chicago, Ill.

When inquiring specify CEP5465 — see information request blank, pgs. 2-3



Next to the Stars and Stripes . . .

AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly*, every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that

you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, TIME IS SHORT.

Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW, Washington, D. C.

Make Every Pay Day "Bond Day"

U. S. WAR BONDS • STAMPS

This Space is a Contribution to Victory by

CHEMICAL EQUIPMENT PREVIEW



MULTICLONES

Recover
strategic materials to meet
production requirements

Production and more production is the problem faced by industry everywhere.

MULTICLONE collection of values conserves raw materials and makes for still greater production. In the process industries, MULTICLONES are proving their recovery value day after day. In one molybdenum plant alone the value recovered each day pays for the cost of the MULTICLONE. Here are some of the things that make MULTICLONES outstanding.

LOW DRAFT LOSS SAVES POWER • COMPACT AND FIREPROOF
EASY TO ERECT, EASY TO INSPECT • COLLECT FINE PARTICLES
FROM HOT OR COLD GASES

MULTICLONE assemblies provide a range of collection efficiencies to meet every requirement.

WESTERN PRECIPITATION CORPORATION
Main Offices: 1023 West Ninth St., Los Angeles, Calif. • New York
Chrysler Building, New York City • Chicago: 140 South Dearborn St.
Chicago, Ill. • San Francisco: Hobart Building, San Francisco, Calif.
PRECIPITATION COMPANY OF CANADA, LTD.
Dominion Square Building, Montreal

When inquiring specify CEP5466 — see information request blank, pgs. 2-3

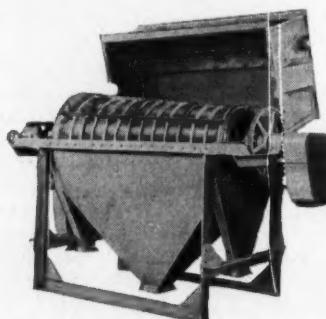


MULTICLONES meet
every requirement for
cleaning, inspection or
sterilization.



WRITE TODAY FOR
COMPLETE INFORMATION
ON MULTICLONES

DUST-PROOF FORCED BOLTING MACHINE



This machine is built primarily for dust-proof bolting of products that are lumpy or difficult to bolt.

Rugged in construction and efficient in its operation, the unit has proven applicable in numerous bolting problems.

Send us details of your requirements and ask for complete information. Write:

SPROUT, WALDRON & COMPANY, INC.
181 Sherman Street

Muncy, Pennsylvania

Engineers — Designers — Manufacturers
Since 1866

When inquiring specify CEP5467 — see information request blank, pgs. 2-3

PRODUCTION

Hinged Wooden Lockers Easily Shipped and Erected

Moisture resistant plywood panels; choice of keyed locks or hasps for padlocks

Uses — Wooden lockers of advanced design incorporate features that make them excellent substitutes for metal types. Provide convenient and safe storage for workers clothing and personal property.

Features — Folding hinged design permits economical shipping and quick, simplified erection.

Description — Panel construction is plywood, treated for moisture-resistance. Door frame is 1 in. poplar and doors are $\frac{3}{4}$ in. plywood with slotted louvers. Choice of keyed locks or hasps for padlocks. Two double coat and hat hooks are provided. Most standard sizes are made in units of four single or eight double tier sections. Special sizes available.

LOCKERCRAFT CO., Dept. CEP, 1112 Harter Bank Bldg., Canton, Ohio.

When inquiring specify CEP5468 — see information request blank, pgs. 2-3

Small Turret Lathe Well Adapted To Second Operations

Small bench model for rapid production to close tolerances on chucking operations, bar work



SMALL LATHE . . . machining bar work

1 in. collet capacity. Handlever operated bed turret indexes automatically and has an adjustable stop for each of six tur-



WOOD CLOTHES LOCKERS . . . in
standard and special sizes



WITH THE
TRIANGLE MODEL SNA COM-
BINATION AUGER PACKER
AND GROSS WEIGHER

• This fast, accurate, flexible machine is especially suited to PACKING and WEIGHING practically every kind of powdered material packaged in bags or cartons from 2 to 24½ lbs. Fits readily into any packaging setup and requires only one operator. Production up to 18 packages per minute. Design insures clean and tight packing. One of a complete line of automatic and semi-automatic Packers, Weighers, Fillers and Carton Sealers for all dry products. Full details on request.

"Distinct Improvement"

Says U. S. Gypsum Co.

• "In reply to your recent letter we are glad to state that the Triangle installation in our plant has proved to be very satisfactory. This machine has now been in operation for several years and has been a distinct improvement over the installation which it replaced. Our Model SNA Packer has made it possible for us to produce a neater and more satisfactory filled package and to materially increase our production speed."

TRIANGLE PACKAGE MACHINERY CO.
917 NO. SPAULDING AVENUE, CHICAGO

BRANCHES IN PRINCIPAL CENTERS

When inquiring specify CEP5469 — see information request blank, pgs. 2-3

Entirely Different
FROM ANYTHING
YOU'VE EVER SEEN BEFORE

The "HAMMOND"

Screw-Lift and Screw-Veyor

A combination of the latest developments of SCREW CONVEYOR CORPORATION offering utmost dependability, perfect alignment, smooth quiet operation, minimum breakage of materials handled and low maintenance expense.

The HAMMOND Screw-Lift is scientifically designed for vertical movement of materials . . . the HAMMOND Screw-Veyor for horizontal or inclined conveying. Together, they form a dust-tight enclosed system, free of operating difficulties.

For Screw-Lift Data Write for Analysis Form M-500-2
For Screw-Veyor Data Write for Form M-600-1



U. S. Pat. No. 2260811-
2260812-2279201.

Other U. S. and Foreign
Pat's. Pend.

Screw Conveyor Corporation
699 HOFFMAN ST. HAMMOND, IND.
SCREW CONVEYORS HAMMOND ELEVATOR EQUIPMENT
TRADE MARK REG. PRODUCTS U. S. PAT. OFFICE

When inquiring specify CEP5470 — see information request blank, pgs. 2-3

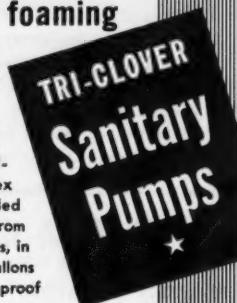


"GENTLE PUSH" action prevents agitation and foaming

"Gentle Push" action is an exclusive feature of Tri-Clover Pumps. The famous patented one-piece impeller produces a gentle, even flow without pulsations or agitation. These pumps handle clear liquids, heavy liquids, and liquids containing semi-solids. Even such substances as extended latex of 30% concentration or higher are handled perfectly. • Made in 16 models ranging from $\frac{1}{2}$ " to 6" sanitary or iron pipe connections, in maximum capacities from 100 to 42,000 gallons per hour. Furnished complete with splash-proof motor. Write for catalog and price list.

TRI-CLOVER MACHINE CO., Kenosha, Wis.

When inquiring specify CEP5471 — see information request blank, pgs. 2-3



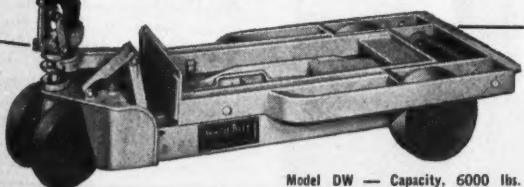
You move assembly materials EASIER with "Weld-Bilt"

Hydraulic Lift Trucks

Many a tight production schedule is moving smoothly because of "Weld-Bilt" Hydraulic Lift Trucks. Engineered and built to specifications to move materials faster, easier, for a longer time, saving mass energy and man hours.

Do you know some of the many "Weld-Bilt" features that make this greater efficiency possible? Write for details TODAY!

Below — New Streamlined "Weld-Bilt" Hydraulic Lift Truck with Hydraulic unit mounted HORIZONTALLY (protected position that avoids "out-of-service" layups.) Capacities, up to 10,000 lbs.



Model DW — Capacity, 6000 lbs.

WEST BEND EQUIPMENT CORPORATION

Materials Handling Engineers

225 S. Water Street • West Bend, Wisconsin

Manufacturers of Portable Electric Elevators, Two-Wheel and Four-Wheel Trucks, Skid Platforms, Barrel Racks, Tiering Machines, and special equipment.

When inquiring specify CEP5472 — see information request blank, pgs. 2-3

PRODUCTION

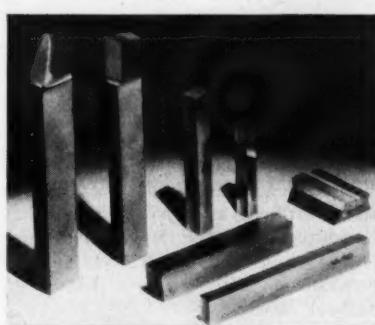
ret faces. The lathe is equipped with both a compound rest cross slide and a handlever cross slide, which are interchangeable. The latter is furnished with front and rear tool blocks which provide three tool positions. A quick change gear box supplies 48 longitudinal power feeds for the universal carriage, 48 power cross feeds for the compound rest cross slide, and 48 thread cutting feeds, 4 to 224 per inch. The underneath motor drive and back gears deliver twelve spindle speeds, from 97 to 700 RPM. Complete information furnished on request on this Series 1000 lathe.

SOUTH BEND LATHE WORKS, Dept. 9Y, South Bend, Ind.

When inquiring specify CEP5473 — see information request blank, pgs. 2-3

New Alloy Gives Cutting Tools Greater Speed, Longer Life

Offered in standard bits, welded tip tools in variety of shapes and sizes



CUTTING TOOLS . . . made of new cobalt-chromium-tungsten alloy

on machining of steel parts in war production operations. Features — Tools are made of a new cobalt-chromium-tungsten alloy especially designed to increase the speed of machining steel in production shops.

Performance — With these tools heavy roughing cuts are being taken on steel turning jobs with coarse feeds — to get high rates of metal removal — yet tool life is long. The new alloy is well balanced in red hardness, edge strength and toughness.

Description — Tools are at present available in standard square and rectangular solid bits, and in 20 standard styles of welded tip tools of various sizes for turning, facing and boring. Special tools, including solid bits or brazed-tip styles for grooving or forming special contours are being made to user's specifications. Tools are designated as "Stellite" 98M2.

UNION CARBIDE AND CARBON CORP., Haynes Stellite Co. Unit, 30 East 42nd St., New York, N. Y.

When inquiring specify CEP5474 — see information request blank, pgs. 2-3

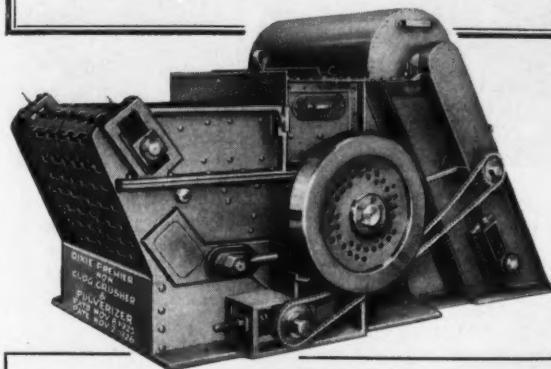
Barrel and Drum Carriers

Six-page-two-color folder, 8 $\frac{1}{2}$ x 11 ins. describes a complete line of drum and barrel carriers. Basic construction features are shown in full page outline photo of standard model while a series of action views clearly portray operation and various applications. Available upon request.

ERNST CARRIER SALES CO., Dept. CEP, 1456 Jefferson Ave., Buffalo, N. Y.

When inquiring specify CEP5475 — see information request blank, pgs. 2-3

WHEN PRODUCTION CANNOT LAG DIXIE GETS THE CALL!



DIXIE Non-Clog HAMMERMILLS

NOTE THESE TYPICAL TOUGH JOBS LIKED BY DIXIES

1. Replaced four crushers for high moisture content bauxite . . . cut power in half . . . reduced drying costs . . . increased production.
2. Efficiency crushing clay balls to reclaim phosphate in Florida phosphate plants.
3. Crushing phosphate muck in T. V. A. Tennessee plant.

HERE'S WHY: . . .

The Dixie Non-Clog Hammermill is the only crusher with a moving breaker plate. Provides positive mechanical feed. No manual pushing of material needed. Even the most plastic, wet, clayey material will not slow production or clog hammers. This feature alone has saved the cost of 10 men in one company!

And because the Dixie moving breaker plate can be adjusted forward or backward from the hammer points, quality and size of production can be controlled. This feature also provides additional assurance against clogging.

These are but two of Dixie's outstanding features. Send coupon below for free booklet, "More Efficient Crushing of Raw Materials" which gives complete facts.

DIXIE MACHINERY MFG. CO.

4202 Goodfellow Blvd., St. Louis, Mo.

GET THE FACTS!

Dixie Machinery Mfg. Co.
4202 Goodfellow Blvd., St. Louis, Mo.

Please send free booklet on Dixie Non-Clog Hammermills. We want to crush . . .

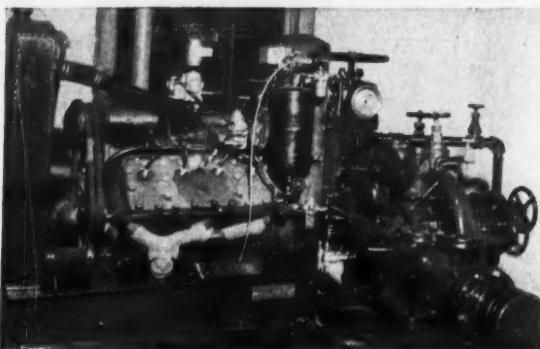
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Company . . .

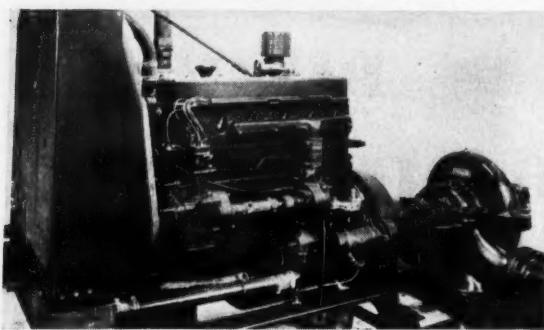
Address . . .

City . . . State . . .

When inquiring specify CEP5476 — see information request blank, pgs. 2-3



Ready for emergencies stands this new Fairbanks-Morse Fire Pumping Unit consisting of a 4" F-M Fire Pump driven by a direct-connected Ford-Mercury engine—for which replacement parts and service are available in practically every village.



Another recent F-M installation—a 5" F-M Split-case Centrifugal Pump driven by an F-M 115-hp. gasoline engine.

NEW FIRE PUMPING UNITS FEATURE LOW COST AND SIMPLICITY

FIRE . . . destructive . . . terrorizing FIRE . . . is an ever-present menace in these days of aerial bombardment and sabotage. Providing adequate fire fighting facilities is an initial and vital defense step. But the smaller industrial plants and municipalities often find standard pumping station equipment too expensive and too complicated.

To permit adequate fire protection in such cases, Fairbanks-Morse has recently developed simpler, moderately priced fire pumping units. Two of these units are pictured above.

Exercise your priority to get this Underwriters-approved F-M Fire Pumping equipment, and you'll be prepared to fight the enemy, FIRE, not only in wartime but during the years of peace to come. For complete details write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

When inquiring specify CEP5477 — see information request blank, pgs. 2-3

PRODUCTION

Portable Battery Floodlight for Combustible Areas

For use where combustion hazards prevent installed lighting



PORTABLE UNIT . . . gives powerful medium angle floodlighting

Description — Floodlight consists of a small steel box, 19" x 9 7/8" x 20 3/4" with a special dust-and-vapor-proof lamphousing mounted on a bracket to permit pointing in any direction. Powerful medium angle floodlighting distribution is achieved through a high efficiency glass reflector, pre-focus positioning of the 50 candle power concentrated-filament type bulb and a diffusive lens. 5 cell storage battery with non-spill valves is housed in box. Burning time about 10 hours.

GENERAL ELECTRIC CO., Dept. CEP, Schenectady, N. Y.

When inquiring specify CEP5478 — see information request blank, pgs. 2-3

Tube Turn Welding Fittings

Jumbo-size-12-page-folder contains large dramatic photos showing war scenes, numerous welding operations and charts to show the tremendous growth in use of many applications of welding, with emphasis upon welded piping. The manner in which the manufacturer's tube turn welding fittings guard against bursting, leaking and other failures is described and illustrated. Pictures show various points in production and application. Publication titled "Sparks," is available upon request.

TUBE TURNS, INC., Dept. CEP, Louisville, Ky.

When inquiring specify CEP5479 — see information request blank, pgs. 2-3

Industrial Motor Blowers for Heating, Cooling, Drying, Exhausting, Belt or Direct Drive

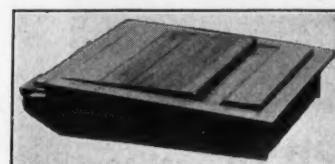
Motor blower units in a wide range of sizes applicable to industrial ventilating, drying, heating, cooling, exhausting, processing and air conditioning requirements are illustrated and described in a four-page-illustrated bulletin. Sixteen models are listed. One, two and three fan assemblies which meet most requirements are pictured. Non-corrosive surfacing, available as an extra specification is also emphasized. Bulletin 89-Part 1 sent on request.

NIAGARA BLOWER CO., Dept. CEP, 6 East 45th St., New York, N. Y.

When inquiring specify CEP5480 — see information request blank, pgs. 2-3

A guaranteed magnet as strong as an electro-magnet. The FIRST permanent magnet with Class "A" Insurance Rating.

NIAGARA PERMAFLUX MAGNETIC SEPARATORS CONSTRUCTED OF "ALNICO" THE NEW MAGNET ALLOY



The introduction of "Alnico", the result of intensive research into the composition of magnet alloys, has made possible this exceptionally strong permanent magnet. The PERMAFLUX retains its great strength undiminished through years of service. For wood or metal chutes or spouts, in various sizes. We invite your inquiries.

RICHMOND MFG. CO.
MANUFACTURERS OF
HI-SPEED GYRATORY SCREENS
MAGNETIC SEPARATORS, ETC.
LOCKPORT
N. Y.

When inquiring specify CEP5481 — see information request blank, pgs. 2-3



Specialized Safeguards for Chemical Handling!



Wherever workers handle acids and chemicals, serious danger exists. To meet these hazards, Pulmosan has assembled a group of specially designed safeguards including Aprons, Gloves, Sleeves, Hoods, Goggles, Fume and Dust Respirators, Eyeshields, Carboy Handling Devices, Acidproof Pails and Dippers, Skin Creams, etc. Each item is thoroughly tested and provides dependable protection. Let us know your requirements.

PULMOSAN
SAFETY EQUIP. CORP.

Dept. EP, 176 Johnson St., Brooklyn, N. Y.

Write for leaflet
"SAFE HANDLING OF
ACIDS and CHEMICALS"
showing complete line
of protective equipment

When inquiring specify CEP5482 — see information request blank, pgs. 2-3

CHEMICAL EQUIPMENT PREVIEW



Give "KID-GLOVE HANDLING" to Valuable Products

This manufacturer's pharmaceutical products get safe, smooth, sanitary handling on level-top Whitney Platform Chains. Breakage is avoided . . . container-bottoms are not soiled. And Whitney Platform Chains are built on standard Whitney alloy-armored-steel Roller Chains . . . to give extra service life under today's non-stop operating conditions.

THE WHITNEY CHAIN & MFG. CO., HARTFORD, CONN.

When inquiring specify CEP5483 — see information request blank, pgs. 2-3

EVEN BEFORE the Rubber Shortage STANZOIL NEOPRENE GLOVES Gave Better Hand Protection at Lower Cost per Day

These remarkable industrial gloves are *not* a substitute for rubber you can't get—Stanzoils have offered you *improved* hand protection and glove economies for several years! And alert concerns in hundreds of industries have been taking advantage of these benefits.

Consider: They stand oils, greases, caustics, acids that quickly destroy natural rubber; they last 3 to 7 times longer in most uses. They give more complete hand protection, they're not stiff or clumsy, they're comfortable, people like to wear them. Styles, weights and sizes to meet your requirements. The best protection of your workers and your production pays. Write us today for current data on deliveries.

Synthetic Rubber Division
The Pioneer Rubber Company
Over 20 Years of Quality Glove Making
239 Tiffin Road, Willard, Ohio, U.S.A.
New York • Los Angeles
MADE WITH DU PONT NEOPRENE

When inquiring specify CEP6484 — see information request blank, pgs. 2-3

PRODUCTION

Continuous Core, Floor Conveyor, Overhead Trolley Ovens and Web Dryers

Twenty-page-and-cover bulletin describes and illustrates industrial ovens to meet specific requirements and that are in many cases, to a large extent, assembled from standard parts and units. Particular attention is called to points that must be observed in construction such as adequate strength, insulation, tight joints, explosion relief, access doors for cleaning, corrosion resistance. Features of panel construction in this equipment embodying method of over-lapping and bending metal to eliminate continuous thru-metal and secure strength without use of braces is shown in sectional drawing. Use of asbestos roping to seal joints is also described. Heating principles are discussed and compared and the possible advantages of forced convection explained. Actual installations are illustrated in photos as follows: Lithograph and enamel ovens, wire baking, continuous core ovens, web dryers, floor conveyor ovens, overhead trolley ovens. Bulletin No. 130 sent on request.

J. O. ROSS ENGINEERING CORP., Dept. CEP, 350 Madison Ave., New York, N. Y.

When inquiring specify CEP5485 — see information request blank, pgs. 2-3

Brush Sifters for Chemical Applications

Eight-page-catalog-attractively covered, is devoted to brush sifting equipment for chemical and allied industries. Various types of brushes in steel and wood mountings and construction details are shown and discussed. The wide selection of sifting equipment offered includes manual and powered spiral type units, a variety of straight brush sifters, some to meet highly specialized requirements and combined mixers and sifters. Catalog No. 27 A is available upon request.

ROBINSON MFG. CO., Dept. CEP, Muncy, Pa.

When inquiring specify CEP5486 — see information request blank, pgs. 2-3

Stainless & Chromium Plated Welded Floats for Chemical and Steam Applications

Four-page-illustrated bulletin contains a complete tabulation of a large selection of welded steel floats in spherical, elliptical and cylindrical shapes, sizes 2" to 14" diameter for chemical and steam specialty equipment such as liquid level controls, float operated valves, steam traps, water columns and tanks. Recommendations to aid in selection are given and choice of chromium, cadmium, nickel, copper plating is offered. Bulletin No. 339 available upon request.

W. H. NICHOLSON & CO., Dept. CEP, 12 Oregon St., Wilkes-Barre, Pa.

When inquiring specify CEP5487 — see information request blank, pgs. 2-3

Thermal and Mechanical Dryer for Coal and Granular Materials Reduces Heat Required

A thermal and mechanical drying machine for coal and granular materials is described in an eight-page bulletin which features a large sectional view of the equipment reproduced in four colors. Emphasized feature is a pul-sator which effects mechanical dewatering materially reducing the total heat required to dry material. Specifications and engineering data are presented in convenient form. Bulletin No. 242 available upon request.

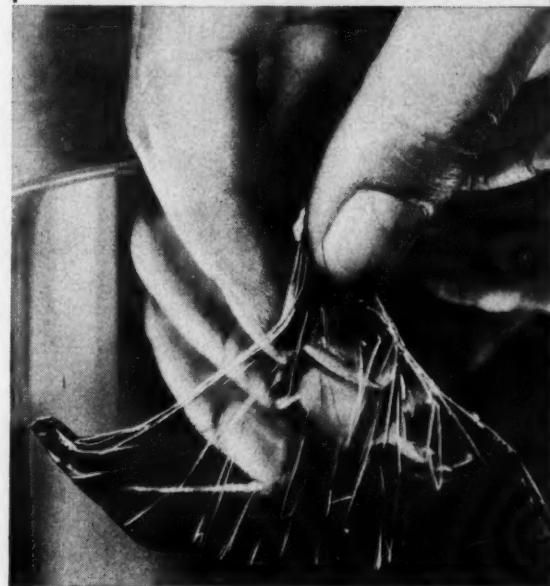
MC NALLY PITTSBURGH CO., Dept. CEP, 307 No. Michigan Ave., Chicago, Ill.

When inquiring specify CEP5488 — see information request blank, pgs. 2-3

TYGON TEMPRO-TEC

provides

AN ELASTIC, EASILY REMOVED FILM
FOR TEMPORARY PROTECTION OF
HIGHLY POLISHED SURFACES AGAINST
RUST, TARNISH, DUST AND CORROSION



• Tygon Tempro-tec air dries within a few minutes at normal room temperatures to form a sturdy, durable, easily removed elastic film, unaffected by oil, grease, corrosive atmospheric fumes or condensates. It will not become brittle under exposure to sunlight; is unaffected by active oxidizing agents, or by water, alcohol, or brine solutions.

Tygon Tempro-tec easily strips free, peeling off as a complete film, without danger of injury to the surface beneath.

Tygon Tempro-tec provides excellent temporary protection for highly polished surfaces against rust, grease, finger markings, dust, scratches, etc. It is likewise an effective tarnish preventative for sterling silver, plated silver, chrome, nickel or gold, copper and other metals. It is ideal for masking parts in hard chromium plating.

Available in crystal clear, or transparent colored formulations for ready identification purposes. May be applied by brushing, dipping, spraying, or roller coating.

U.S. STONEWARE
ACID PROOF
ENGINEERS, MANUFACTURERS, ERECTORS OF CORROSION RESISTANT EQUIPMENT
AKRON, OHIO

When inquiring specify CEP5489 — see information request blank, pgs. 2-3

1st IN DESIGN TOPS IN EFFICIENCY

★ Quincy was the *first* to design and build an air compressor that combined modern appearance with improved mechanical features. Construction is simpler. Radiation area is increased 12%. Lubrication is more thorough—more positive. The policy of building air compressors exclusively has helped to make the name *Quincy* a symbol for dependability and efficiency. *If you have compressed air problems in your work, let us help you solve them!*

Quincy
COMPRESSORS

QUINCY COMPRESSOR CO., DEPT. M-2, QUINCY, ILLINOIS

When inquiring specify CEP5400 — see information request blank, pgs. 2-3

Now 65
25 YEARS
OF "KNOW HOW"
go into **Westco** Pumps

Westco, the original horizontal turbine type pump with renewable liners, having established an outstanding performance record during the past 25 years on hundreds of thousands of applications, is now ready for even greater service.

For now the engineering "know how" of Pomona Pump Co.'s 40-year leadership in the industry have been added to Westco's background, resulting in a still better, tougher, longer-lived pump. Production has been stepped up far beyond any previous record—and wider distribution has resulted, much of it in new fields.

With this 65 years of combined pump "know how" behind it, your installation of a Westco Pump inherits a legacy of value doubly important in checking on pump equipment today!

Distributors in all principal cities or write us direct.

POMONA PUMP CO.
WESTCO DIVISION
2621 Locust Street • St. Louis, Missouri

With Westcos, simply re-new the liners (arrows) and you renew the pump!

When inquiring specify CEP5491 — see information request blank, pgs. 2-3

PRODUCTION

Heavy Duty 8 & 10 In. Casters

New fork and swivel design; resoid or nicro-steel wheels



NEW HEAVY DUTY CASTER

heavy bar stock securely welded to the swivel head. Shape and design of this fork provides unusual strength. Casters are available in a series of eight and ten inch types, meeting requirements of varying kinds of loads. Choice of either ABK resinous or Nicro-steel wheels. Soft or hard tread rubber wheels furnished for WPB approved applications.

RAPIDS STANDARDS CO., Dept. CEP, 535 Bond Ave., N. W. Grand Rapids, Mich.

When inquiring specify CEP5492 — see information request blank, pgs. 2-3

Automatic Electric Ampoule Machines for Filling, Sealing and Imprinting

Ampoule filling and sealing machines are described and illustrated in a two-color-extra size bulletin. The numerous features incorporated in this re-designed equipment provide superior sealing at a greatly increased rate of speed. Concerning performance, reference is made to handling ampoules ranging from 1 cc to 10 cc, sealing them at rate of about 1000 per hour. Eight sealing stages permit better flame control for handling harder varieties of glass. Automatic and adjustable features are dealt with and design permitting easy, thorough and fast sterilization is also pointed out. Complete specifications are given. Ampoule washing and ampoule printing units are also mentioned. Bulletin Perfektum Ampoule Machines sent on request.

PERFEKTUM PRODUCTS CO., Dept. CEP, 300 Fourth Ave., New York, N. Y.

When inquiring specify CEP5493 — see information request blank, pgs. 2-3

Industrial War Defense Apparel

Defense equipment for industrial war emergencies is illustrated and described in an attractive two-color-four page bulletin. Two types of gas masks, goggles, asbestos gauntlet gloves in three lengths, fire fighter asbestos suits, helmets (asbestos) with shatter-proof isinglass visor, shoes and a vulcanized fibre hat comprise the selection offered. A theft-proof kit for storing suit is available. Bulletin sent on request.

PULMOSAN SAFETY EQUIPMENT CORP., Dept. CEP, 176 Johnston St., Brooklyn, N. Y.

When inquiring specify CEP5494 — see information request blank, pgs. 2-3

Stainless Steel is Scarce!

—but simple care will add years of life to your present equipment

SEND FOR THESE CARDS
THEY'LL TELL YOU HOW



Care of stainless steel equipment is of utmost importance—because you probably cannot replace it today, unless you have a very high priority.

Republic's Stainless Steel Conservation Cards will tell you how to give it that care—how to extend its normally long service life by taking certain precautions in use and cleaning.

Tell us the nature of your operations and we'll gladly send you as many of these easy-to-read wall cards as you need.

REPUBLIC STEEL CORPORATION

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Alley Steel Division Sales Offices: Massillon, Ohio
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Union Drawn Steel Division • Truscon Steel Company
Export Department: Chrysler Building, New York, New York

REPUBLIC
Enduro STAINLESS STEEL

When inquiring specify CEP5495 — see information request blank, pgs. 2-3



1. DIRECT DRIVE. Fewer parts, lower cost, and less space needed because the drive is direct. No intermediate speed-changing device. Get power closer to where you want it. Streamline your machine design.

2. SPEED CONTROL CONVENIENCE. No limitations. You can place your speed-changer and start-stop button at any point to which a wire can be run. Control is within easy reach.

3. FROM A-C. POWER SOURCE. All these advantages can be had at a low price through the "packaged" V+S Speed Control unit. You can mount it anywhere. Simply connect it by three wires to a 3-phase a-c. power circuit.



ALSO: Quick stopping, reversing, speed-setting, safe speeds for threading, ample starting torque with smooth acceleration. Bulletin 3K.

RELIANCE ELECTRIC & ENGINEERING CO.
1088 IVANHOE ROAD • CLEVELAND, OHIO
Sales Offices in Principal Cities

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CHEMICAL EQUIPMENT PREVIEW

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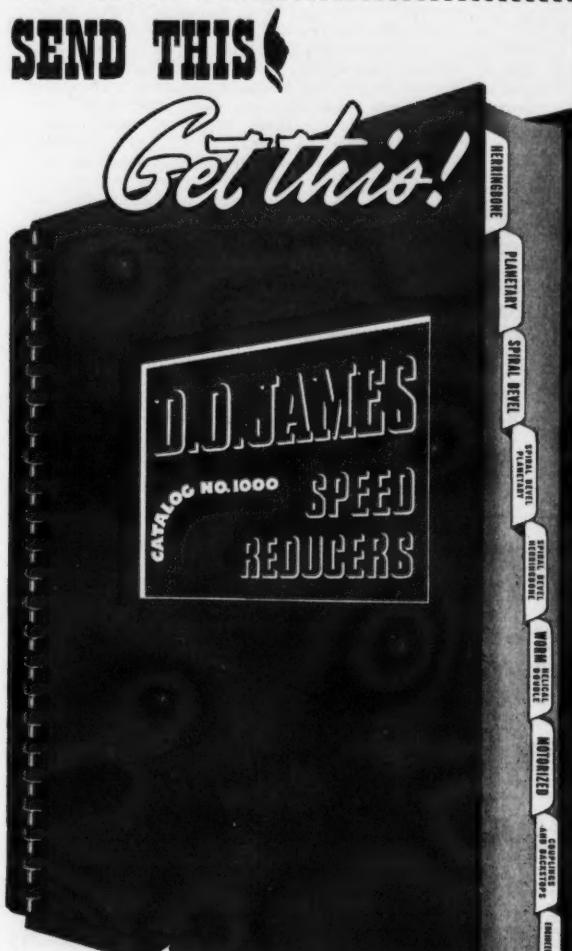
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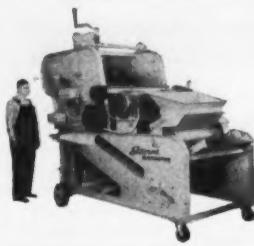
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Tough, Plastic Patch Trucked Over Immediately

No traffic interruptions when you patch broken concrete with durable INSTANT-USE. Material comes ready mixed. Simply shovel into hole, tamp and run traffic over immediately — without waiting. Bonds tight to old concrete. Makes smooth, solid, lasting patch. Withstands extreme loads. Keep a drum on hand for emergencies. Immediate shipment.

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PRODUCTION

Unique Dusting Device Indicates Adaptability to Many Industries

Automatically sprays dry powders without excessive flotation; can be synchronized with other machines

Uses — For automatically spraying dry powders. Originally this equipment was designed primarily for several applications in the printing industry to prevent offsetting and other operating difficulties. The manner in which it performs dusting operations suggests a wide adaptability to processes requiring spraying or sprinkling of starches, sugars, flours, talcs and related materials. Its use in place of wet methods of spraying where the liquid is merely a vehicle is also indicated.

Features — Sprays powders and dry materials automatically. Eliminates obnoxious and unhealthy excessive flotation of dust particles. Installation to any vertical surface saves floor space. Reduces spoilage. Speeds production.

Performance — Equipment is now being used with most satisfactory results in a number of printing organizations and in printing departments of national food distributing organization.

Operation — Control operation can be by electrical means, synchronized with the machine or processes with which the dusting unit is to function. Mechanical means can be employed or if necessary the control can be manual. Dehydrated air passes through powder from bottom of spray tank. Air, aided by motor driven agitator keeps the powder floated in the upper half of the spray tank during operation. Powder laden air is ejected by siphoning through a feed valve located at top of spray tank. Application is by means of spray heads, consisting of one or more jets or spray tubes with suitable number of parts.

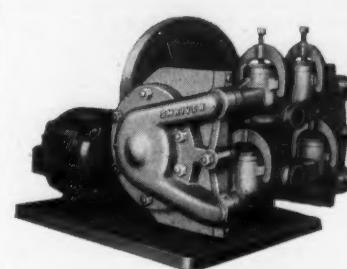
Description — Equipment, complete, consists of spray tank and a storage tank. Spray tank has motor driven agitator. Dehydrator is included with equipment to provide supply of moisture free air. Sight glass enables operator to check powder flotation in upper part of spray tank which is internally lighted while machine is in use. Filters trap any foreign substance in air line. Tanks and operating mechanism are mounted on an electrically wired panel board 11 1/2" by 21". Overall size is 13" by 30" by 8". Overall size of dehydrator 10 1/2" by 22" by 7", base size 2 1/2" by 6 1/2". Device is identified as Craig "Dri-Spray."

CRAIG CORP., Dept. CEP, 143 West 20th St., New York, N. Y.

When inquiring specify CEP5500 — see information request blank, pgs. 2-3

If you are a responsible process executive **CHEMICAL EQUIPMENT PREVIEW** will be sent to you personally if you request the publishers to do so . . . there will be No Charge. See request slip between pages 78 and 79.

IF IT'S TOUGH STUFF Here's the Pump to Use



- CORROSIVE OR ABRASIVE SLURRIES
- HEAVY SUSPENSIONS
- THICK LIQUIDS

If you can't tolerate frequent breakdowns or worn out pumps handling difficult materials, then the Shriver Diaphragm Pump is the answer in uninterrupted service at low cost.

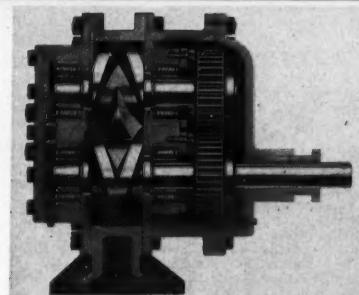
It's a double acting, reciprocating type diaphragm pump delivering volumes at high pressures efficiently. The oil immersed working mechanism is entirely separated from the liquid heads. There is no wear on the mechanism and no expensive replacements. Capacities from 1 to 100 G. P. M.

Write for Bulletin No. 112 to T. Shriver & Company, 846 Harrison St., Harrison, N. J.

Shriver DIAPHRAGM PUMPS

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KINNEY LIQUID PUMPS



Three models of Kinney Heliquad Pumps for Process Industry use: HQA for general service, handles all kinds of liquids, with or without lubrication qualities; cold or hot, viscous or non-viscous. HQB (illustrated) for pumping liquids with definite lubricating value — fuel or lube oil, hot oil, etc. HQG for services where liquid and driving ends must be separated.

Models SD and HP Kinney Rotating Plunger Pumps are particularly adapted for handling viscous liquids and mixtures of viscous liquids and entrained gas.

Write for Bulletin 18.

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CHEMICAL EQUIPMENT PREVIEW

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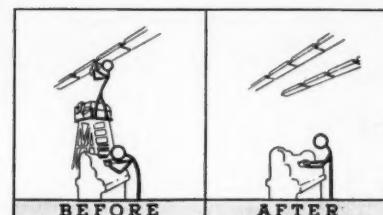
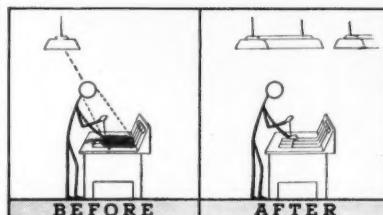
1 BEFORE. Even the best machinist cannot work fast and accurately when eyes are dazzled by *glare* from a bare bulb. Tough on the war production schedule, too.



2 AFTER. Same milling machine, same machinist. Bottleneck cured by a properly shaded light—plus good general lighting. Have a G-E lighting man check *your* lighting!

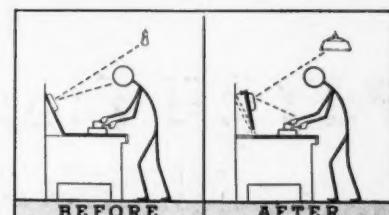
How to tell a Bottleneck when you see one!

G-E uses simple diagrams to illustrate common lighting errors that slow up War Production

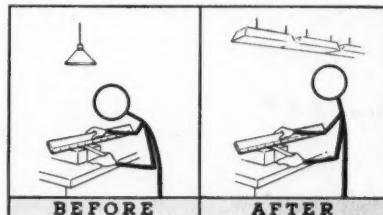
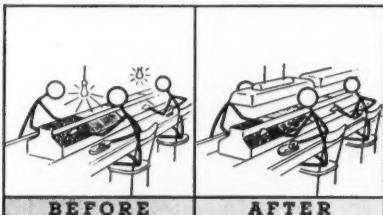


3 SHADOWS are enemies of production. They make a workman look *twice* when one quick glance should be enough. Spoilage increases when shadows interfere. Cure may be simply to change position of fixtures.

4 DIRT on lamps, fixtures, or windows can cut light as much as 50%! The cure is simple—a *regular* cleaning schedule with soap and water. Light speeds production—so why not get *all* the light you pay for?



5 REFLECTED GLARE from shiny metal or painted surfaces dazzles the eyes—cuts down efficiency of workers. A trained General Electric lighting man can quickly spot this bottleneck and show how to correct it.



6 IMPROPER INSPECTION LIGHTING can slow up the production of an entire plant. Glare in the eyes of inspectors is a common fault. Ideal cure in many cases is G-E Fluorescent lighting. It's cooler for the inspectors, too! See your G-E lamp supplier!

7 TOO LITTLE LIGHT is one of the chief causes of mistakes and spoilage in precision work. Reading micrometers, setting gauges requires keen sharp vision! Cure may be supplementary light over bench or machine, or G-E Fluorescent Lighting. Ask your G-E man!

G-E MAZDA LAMPS
GENERAL  **ELECTRIC**

TO WAR-PLANT EXECUTIVES

Here are 6 of the 22 most common bottlenecks caused by improper lighting. Each is an enemy of speedy war production. That is why G-E maintains a staff of trained lighting men always at the call of war industry. Phone your local G-E office or G-E lamp supplier for a free lighting check-up! Or write General Electric, Nela Park, Cleveland.

Be careful about the lamps you buy

Why not buy lamps that are *made* to stay brighter longer! Every G-E lamp is backed by years of research. Of special interest to war plant management, because of their tremendous efficiency, are G-E MAZDA Fluorescent and Mercury lamps. Your G-E lamp supplier has a complete line!

FASTER CONSTRUCTION

STEADIER OUTPUT

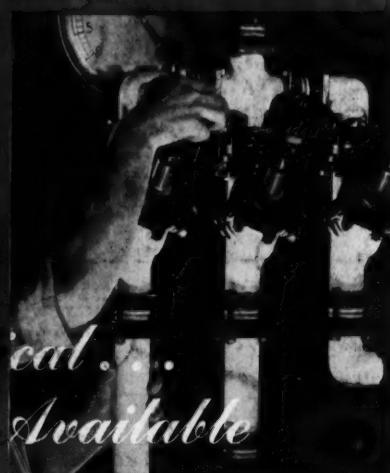
HIGHER PURITY

Lapp Chemical Porcelain

To priority-plagued processors trying to meet into-production-in-a-hurry schedules, Lapp Chemical Porcelain offers a welcome non-scarce material of construction. To processes involving corrosive solutions notorious for knocking the stuffing out of pipe, valves and other equipment, this remarkable material brings amazing strength and endurance. To processes critical of contamination, it makes possible on an industrial scale purity heretofore associated only with laboratory-quality Chemical Porcelain.

*Not Critical...
Quickly Available*

The raw materials of porcelain are available in unlimited quantities. Lapp facilities are adequate for the production of a large volume of porcelain, and of grinding, polishing, cementing and assembly operations. For pipe flanges, valve hardware and other metal parts, reasonable priority ratings are sufficient. On orders placed simultaneously with those for other major equipment, delivery schedules will keep pace of any construction program.



Lapp

Chemical Porcelain



PROPERTIES OF LAPP PORCELAIN AS

A MATERIAL OF CONSTRUCTION

Lapp Porcelain is a dense, homogenous, thoroughly-vitrified, non-porous ceramic. It is completely iron-free, and by nature of its chemical composition is unaffected by any acids except hydrofluoric, is resistant to alkalis. In this characteristic, its smooth texture and complete non-porosity further contribute, in that corrosive liquids are prohibited from absorption and capillary action. Its high order of mechanical strength is surprising to those who have considered porcelain as a fragile material. Its dense homogenous body, and the fact that most pieces are built substantial in section, make Lapp Porcelain a material of ruggedness sufficient to withstand the use and abuse of normal industrial practice.



Lapp Porcelain Pipe

Uniform section pipe with cemented flanges offers high mechanical and thermal strength. Accurately ground pipe ends permit installation with very thin hard gaskets, thus eliminating a chief source of trouble in corrosion-free piping. For special applications where no gasket material can be tolerated, it is entirely practical to use the pipe without gaskets. All standard sizes up to 8" inside diameter, lengths as ordered to 60". All standard fittings.

Special Porcelain Pieces

Lapp facilities lend themselves to the production with relative ease of a variety of special shapes. Routine with us are many types of boiling kettles, processing jars, strainer plates, vacuum filters, towers. If there's a chance that porcelain is the answer to a problem of yours, we'd like to look over your blueprints.

"Lowest cost per year of any tower packing ever used," say many engineers who have now adopted Lapp rings as standard. High mechanical strength and non-porous resistance to corrosion mean longer packing life without crumbling, more hours of uninterrupted service. Purity as found only in chemical porcelain, of course. Sizes to 3", some available from stock.



The Valve

No corrosion-free equipment has ever been put to such severe test as the Lapp Valve. None has ever met requirements more satisfactorily. Valve stem is ground and polished to mirror finish, sealing surfaces lapped to precision fit—action is smooth and easy, without abrasion of packing. Seal is maintained, even under thermal change and vibration, by a unique spring washer arrangement. Liquids come in contact with porcelain only. Standard sizes to 4".



Valves • Pipe • Raschig Ring